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THE SPECIALIST'S RELATION TO THE AMERICAN MEDICAL ASSOCIATION

AND A PLEA FOR GENERAL GORGAS' RETENTION IN OFFICE *

GREENFIELD SLUDER, M.D.

ST. LOUIS

When I was elected to this most important and flattering position last year, I felt that there were so many others that could have served the purpose better, that I was sorry for it, but as the year has gone by, I have felt more and more that my privilege was a very high and sacred one, and have done the best I could to merit it.

Rarely, I think, has a chairman had matters of such importance to present to the section. I have two subjects of the greatest interest to all medical men, namely, the position in which the Army medical service at present finds itself,[1] and our relation to the American Medical Association.

SECTION DIFFICULTIES

The second subject that I bring to your attention is our relations with the American Medical Association. I say our relations, by which I mean those of otolaryngologists and ophthalmologists. It seems that, according to the categories of the Association, we are the only ones thought of as specialists; or at least that is the impression that I get from reading the proceedings of the House of Delegates in New York City last year.

So we, as specialists, have a problem to present to the Association. In fact, however, almost every practitioner at the present time, at least the successful professional men in the larger cities, are, in reality, specialists. The whole field of medicine now-a-days is an absolute physical impossibility for any one man to compass satisfactorily and permit himself to say that he can do it all.

The specialties now include not only gynecology and genito-urinary surgery, formerly considered in the same section, but also gastro-enterology, etc.

The number of sections in the present meeting is fifteen. Each of these sections may be said to be a special section; but for some reason, the Trustees have not considered it so, and have selected us as men more or less outside the pale of interest for the general practitioner; and because our papers are "of no interest to the general practitioner," they propose to leave us out of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

We shall be permitted to meet as a section of the Association, to transact as much or as little business as we please; but our proceedings are to be ignored, as they put it on the ground that the cost of THE JOURNAL has increased very greatly. Later, they passed a resolution declaring all section papers voluntary, and to be edited.

That the cost of everything has increased greatly is familiar to all of us—painfully so. THE JOURNAL has shared in this increase, which might also be shared by us, just as we share in bearing the increased cost of everything else. If the cost of THE JOURNAL is beyond the subscription price of $5 at the present time, as a matter of business there can be no possible reason given why the price of THE JOURNAL couldn't be raised somewhat to meet the necessities of the publication at the present time. But that has not been the plan of action of the Trustees. They have elected to omit our papers, except when they see specially fit to publish one, and on second thought, to omit all other section papers they see fit.

At first thought, some of us might be indifferent to this rule, but on second thought, it seems to me that none of us can possibly be indifferent. We are medical men in sympathy with our fellow practitioners. We want to know what they are doing; and I can see no reason why we should not arrogate unto ourselves the idea that they should be interested, somewhat at least, in what we are doing.

THE CHARGE OF UNDUE TECHNICALITY

The Trustees have characterized our papers as too technical to be of interest to the general practitioner. They have also criticized the censorship exercised over the papers admitted to the program. We can readily understand that some papers may be very highly technical, and for that reason the author himself should consent to the publication, not of his full text, but of some small abstract which will point the way for the general practitioner, should he care to look the paper up. And if there is laxity in censorship, this not only might be, but should most decidedly be, corrected.

As a member of the section for a number of years, it seems to me that the papers presented before this body have been almost uniformly good, and worthy of presentation and of our time spent in listening to them.

* Chairman's address, read before the Section on Laryngology, Otology and Rhinology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

1. Concerning this subject statements were made relative to the retention of General Gorgas as surgeon-general. These are omitted from THE JOURNAL since General Gorgas was retired in October, having reached the age limit. The complete text appears in the Transactions of the Section.

The idea of being outcasts from the pages of THE JOURNAL seems to me such a calamity for us that I feel that special emphasis at this time should be laid on what THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION is, and what are its possibilities for us.

Firstly, there is no journal in the country that reaches anything like the number of men that THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION reaches. It is the only general journal; all the other journals are more or less local affairs. A parallel has been drawn between our country and Great Britain. This doesn't seem to me to be exactly a thing permitting argument. The Trustees have declared that the British Medical Association publishes only abstracts, and finishes them up in a very short time, possibly a few weeks.

The policy of the *British Medical Journal* is to publish the abstracts and finish them very quickly. The reader of the paper then has the privilege of publishing them anywhere. Physicians have the well known *Lancet,* in which their material may appear. There is no journal in our country that in any wise compares with the *Lancet.* We are left, then, if we have the desire to appeal to the general profession, to one journal only, THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

It appears to me that this proceeding, by which we are ruled out of THE JOURNAL, is not only a disaster for us, but a disaster for the general profession. I cannot agree with the Trustees in their point of view, although I recognize by their names that they are a most estimable and intelligent body.

When they say that our work is of no interest to the general practitioner, they overlook the fact that almost all the general practitioners and general surgeons of the entire country at the present time will remove tonsils and adenoids if they have the opportunity of doing so, or at least they will try to remove them. They will also perform all the intranasal surgical operations that their intelligence permits them to suggest to the patient; and from an observation of such patients after having been operated on by the general men, we must all be struck with the idea that, if the general practitioner knew more about this work it would be not only to his advantage, but even more to the advantage of the patient. Many of the unfortunate results from which the patient suffers would be avoided. If the general practitioners are to continue in the practice of nose and throat surgery, then it behooves us from the same altruistic motive so emphasized by THE JOURNAL itself, as part of its plan of action, to educate the general profession as far as possible further along the line of the specialties for which they operate. Therefore, it is impossible to understand how any intelligent medical man can declare that the work of the eye, ear, nose and throat sections is of no interest to the general profession.

The Trustees have emphasized the fact that the papers are technical. Every now and then, it is true, there comes out a perfectly simple technical paper—a record of facts; but facts can never be properly valued at the time they are presented. Nevertheless, the record of a new fact is always justifiable.

A SPECIALIST'S DISCOVERY OF GENERAL INTEREST

Nothing can more clearly emphasize this point than the work of my friend, Dr. W. E. Shahan of St. Louis, who, four or five years ago, began the investigation of the effect of heat on the eye. He determined the cornea would stand a certain degree of heat without detriment. He then took up the question, "What is the degree of heat at which the various organisms are killed in the tissues?" and by experiment he found that at a temperature of 156 F. the pneumococcus was killed within the cornea. He devised a machine by which heat could be very accurately controlled, and this temperature applied to the ulcers of the cornea. It is perfectly well known that the pneumococcus is one that destroys the globe in the great majority of instances.

Through this bit of observation, Dr. Shahan has determined that the pneumococcus ulcer, heretofore so destructive, can be satisfactorily controlled in almost any case, as I understand it; and when the ulcers are beginning to form they are stopped and cured. The number of eyes that have been saved by this practice is unlimited.

The discovery has been turned to use for other purposes also, in other departments of ophthalmology. All of this was published in THE JOURNAL.

It is impossible for me to understand how an observation such as this can fail to be of interest to the general practitioner. It seems to me that if facts of this type cannot interest him, he is an exceedingly poor, low-grade sample of his kind. That there were such practitioners some years ago is perfectly well known; but certainly, as the years go by, that number diminishes. The men who replace them are of a different type. They are infinitely better educated, and of infinitely wider interests, not only in medicine, but in human affairs at large. Furthermore, the minute their interest in such observation is aroused, the working method by which such an end-result is obtained, would be worth, I should think, an inestimable figure to them.

Many of us would like to do original work, and we admire the men who do; but when, on asking ourselves, "Why don't we do it?" we admit to ourselves that we have no ideas. To follow the working of such an idea as that of Dr. Shahan must surely be a help and an inspiration to all who have any aspiration toward original observation.

Previous to Dr. Shahan's idea, various efforts had been made to apply heat to the eye for therapeutic purpose; but the fact that it was not known at what temperature the cornea or bacteria within the cornea were killed worked for the failure of these attempts.

It seems to me that with the difficulty now confronting the management of THE JOURNAL, we should all be sympathetic.

As a suggestion by which all may feel that they have fair play, I see no reason why a certain number of pages should not be allotted to each section, and these portioned out as may seem best to the authors on the program, by officers of the section. This would relieve the editorial staff of much work and would relieve us of the feeling that our affairs are possibly in the charge of a staff that is not only inimical to us, but ignorant of our rights as scientific medical men. It would give each section the best opportunity to maintain the high value and standard of THE JOURNAL, independent of its able editors and trustees.

ABSTRACT OF DISCUSSION

DR. WENDELL C. PHILLIPS, New York: I have taken pains to find some remedy for the situation which confronts not only this section but all of the sections of the Association. Talking will never accomplish anything. We must take more active measures to get at the facts. There are two sides to the situation, and many difficulties present themselves to the trustees in the management of this great American Medical Association. I have been simply amazed at the responsibilities as well as the care and the thought that is necessary in order that the work of the Association may be carried on well and that we may properly represent the membership.

I will suggest this, that this section and, if possible, the Section on Ophthalmology, appoint a committee with instructions that they consult with the Board of Trustees regarding the quesion of the publication of papers and to give the proper publicity to the papers read before this section and the Section on Ophthalmology. If you will look over the program you will have no difficulty in seeing that even in THE JOURNAL it would be impossible to publish all the papers and discussions together with the other things we are expected to publish during the year. It simply cannot be done, so that some censorship and care has to be taken, and some papers must be eliminated. But I do feel that an effort should be made—and usually it can be done if it is done in the right way—so that the sections and the central officers may have a proper understanding and adopt the best possible plan. I may say, however, that in so far as the specialties have adopted special journals under the auspices of the Association, general satisfaction has been obtained.

DR. L. W. DEAN, Iowa City, Iowa: Last year the executive committee of this section was instructed to confer with the Board of Trustees in regard to the publication of papers read before this section, and there also is a committee from the section to report on the method of publication.

DR. WENDELL C. PHILLIPS: So far as I know no such matter has been brought before the Board of Trustees during 1918.

DR. GREENFIELD SLUDER, St. Louis: Dr. Phillips has been exceedingly helpful in giving us some needed information. The procedure by which we were outcast was one in which we had no part and in which we were denied a part. When I stated that the difficulties of THE JOURNAL should be considered sympathetically, I meant precisely what I said—I selected the term to the best of my ability.

Carbon Tetrachlorid Vapor as a Delousing Agent.—M. H. Foster, Surgeon, United States Public Health Service, in *Public Health Reports,* October 25, makes a preliminary report on experiments for the killing of lice in the clothing by the vapor of carbon tetrachlorid. Heat and hydrocyanic gas are probably the best agents for killing lice but require somewhat complicated apparatus for their use and can be used to advantage only where the work is to be done on an extensive scale. The object of the experiment was to find some agent that could be used practically anywhere and for small operations. It was found that carbon tetrachlorid vapor was effective after two hours' exposure with the clothing rather closely packed in a tin or other vessel that is air tight, in an amount of 25 c.c. The material to be disinfected should not occupy more than half or two thirds of the containing vessel. In the experiments only the lice were killed. The nits were only partly killed, but their hatching was delayed. The method used was simply to pack the material to be disinfected in the can, on top of which were placed several layers of filter paper on which was poured the carbon tetrachlorid. The can was then covered with several thicknesses of toweling and a loose cover placed over this. In some experiments, the lice infested material was wrapped up tightly in papers, etc., and various combinations of carbon tetrachlorid with gasoline, were tried. The unadulterated carbon tetrachlorid was found to be best and the lice were always killed in about the time mentioned. At the present price of carbon tetrachlorid, the cost for treatment of the clothing of one soldier will amount to from 1½ to 5 cents.

ACROMEGALY OF THE LARYNX*

CHEVALIER JACKSON, M.D.
PHILADELPHIA

The literature of acromegaly contains but little reference to the larynx, which seems strange in view of the fact that in a number of cases alteration of the voice is mentioned. I hope that the herein recorded cases will lead to systematic examination of the larynx not only in every case of acromegaly but also in every case of hypophysial abnormality. It is to call attention to the necessity for this that the four cases are reported. Complete reports of all the cases would require too much space and would detract from the emphasis desired to be placed on the laryngeal phases:

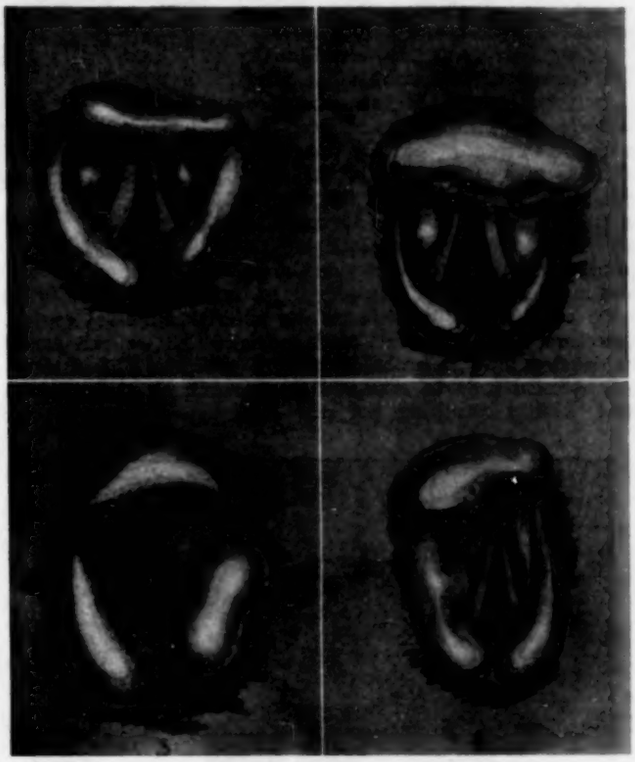

Fig. 1.—Acromegaly of the larynx. The enlargement and thickening of the various prominences of the larynges are bilateral. The asymmetry seems rather a distortion, though at 4 is shown a larynx with elongation of one aryepiglottic fold associated with thickening of its fellow. The larynx shown at 3 was so suggestive of the typical acromegalic hands as to merit the appellation of "gingerbread larynx." The whole larynx by external palpation seemed symmetrically enlarged in all cases except the one shown at 2, in which the overgrowth was limited to the epiglottis.

REPORT OF CASES

CASE 1.—*History.*—A man, aged 43, complained of remittent shortness of breath of two years' duration. Breathing was noisy at night. Repeated "asthmatic" attacks culminated in a severe dyspneic attack two weeks before. A laryngologist arrived in time to do a tracheotomy and save the patient's life. A diagnosis of laryngeal cancer was made and the patient was referred to me.

Laryngeal Examination.—External palpation of the larynx revealed it to be of enormous size, the enlargement seeming even and symmetrical. Laryngoscopic examination showed a general overgrowth of the larynx. The epiglottis, aryepi-

* Read before the Section on Laryngology, Otology and Rhinology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

glottic folds, ventricular bands and vocal cords were proportionally enlarged. An appearance of asymmetry was given by the deviation of the long axis of the glottis, which, instead of being sagittal, was deviated to the left posteriorly (3, Fig. 1). The glottic chink was very narrow and was insufficient for breathing. The left aryepiglottic fold was as much thickened as the right, but was not so long. The whole laryngeal image was strongly suggestive of the facies (Fig. 2) and "gingerbread hands" (Fig. 3) of acromegaly. This, with the suggestive facies of the patient led to an investigation which revealed the case to be one of acromegaly, the diagnosis of which had not previously been made. Questioning elicited the fact that when 23 years of age (Fig. 4) the patient wore a number 8½ shoe, and a 15 collar. At the time of examination, twenty years later, he wore a number 9½ shoe, and a 16½ collar.

Roentgenographic Examination (by Dr. George C. Johnston).—The pituitary fossa is 1¼ inches anteroposteriorly and 1 inch deep. There is a pressure atrophy of the posterior clinoids and of the roof of the sphenoidal sinus. The roof of the sinus is crushed in. There is obliteration of air cells, the anterior lobe of the pituitary resting largely within the sphenoidal sinus. Frontal and maxillary sinuses are very large and clear. There is but little evidence of pressure on the anterior clinoidal region; therefore the bitemporal hemianopsia which we can expect to develop later is probably not yet present. The pituitary enlargement may be expected to encroach on the posterior lobe with a resulting posteror lobe hypopituitarism, and

Fig. 2 (Case 1).—Acromegalic facies of patient, aged 43, who had acromegalic laryngeal stenosis requiring tracheotomy.

I should expect as the disease progresses that this patient will show epileptiform manifestations. It may be that the glottic spasm for which tracheotomy was necessary was partially of this nature. The roentgenogram of the larynx (Fig. 5) shows increased density in all the cartilages of the larynx and an apparent calcification of the stylopharyngeus muscle. The superior cornu of the thyroid cartilage is also very distinctly seen to be elongated, especially the left. The patient is an acromegalic in an advanced stage, showing characteristic gingerbread hands and rough hewn face with African nose.

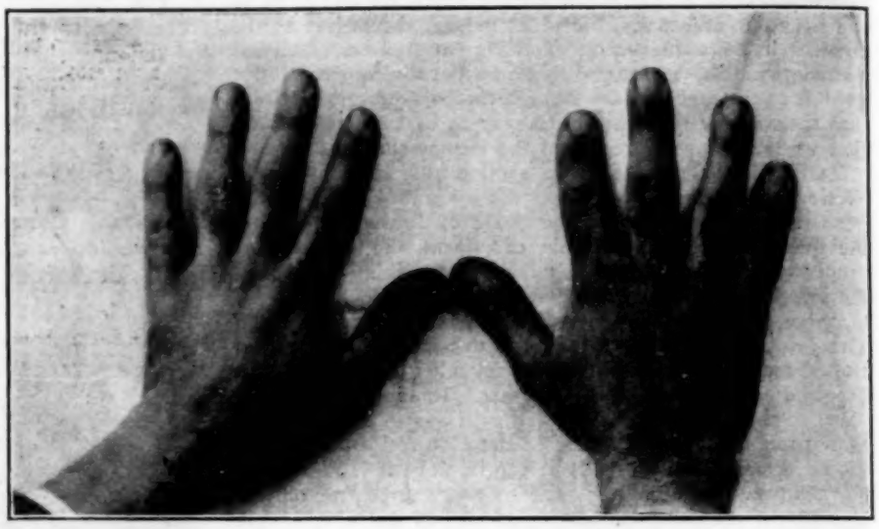

Fig. 3 (Case 1).—"Gingerbread" hands.

The attending laryngologist was advised to send the patient to Dr. Harvey Cushing for study; but before this could be done the patient died suddenly at his home, apparently of asphyxia. No necropsy was obtainable.

Case 2 (Abstract).—A minister, aged 42, was referred for laryngeal examination because of impaired voice, which in recent years had become very harsh and weak. Laryngeal tuberculosis was suspected by the laryngologist in attendance. Palpation revealed a symmetrically enlarged larynx. Indirect laryngoscopy showed the epiglottis thickened. The left aryepiglottic fold was thickened near the epiglottis. The right aryepiglottic fold was elongated (1, Fig. 1). The movement of the right arytenoid was impaired. A diagnosis of acromegalic larynx was made because of the laryngeal overgrowth covered with normal mucosa, in a man with the following general signs of acromegaly: gradual increase in the size of hat and shoes required, enlargement of the external nose, the malar prominences, and the lower jaw. These changes were sufficient to be unmistakable once attention was called to them, but they were not striking; hence the diagnosis of the general malady had not been made by the regular medical attendant. This patient was seen before the days of the usefulness of the roentgen ray in diagnosis of pituitary disease was developed.

Case 3 (Abstract).—A woman, aged 33, referred for consultation as to supposed tuberculosis of the epiglottis, had a masculine voice, and indirect laryngoscopy revealed a thickened epiglottis somewhat suggestive of the turban shape often seen in tuberculosis; but the thickening was more irregular, and all the usual appearances of a laryngeal tuberculosis were absent. The mucosa was normal (2, Fig. 1). A diagnosis of acromegalic overgrowth of the epiglottis was made on the basis of the following general signs: nose enlarged, forehead somewhat retreating, both ears enlarged, finger rings had become so tight as to require sawing to remove them. Hypophysial disease was revealed by roentgenography at Western Pennsylvania Hospital. The masculine character of the voice with a normal laryngeal interior pointed to changed resonating cavities, though of course the character of the normal male voice is partly due to laryngeal differences.

Case 4 (Abstract).—The patient was referred for supposed lupus of the larynx, the diagnosis being based largely on a scar on the nose which the patient attributed to a "boil." Indirect laryngoscopy revealed a larynx very much elongated anteroposteriorly, the left aryepiglottic fold being fully half

again as long as normal, the sagittal length of the glottic chink being increased by about one third. The epiglottis was overgrown to about thrice its normal thickness, and it was tilted at an angle of about 10 degrees. The right aryepiglottic fold was overgrown in all directions with a nodular thickening near the epiglottis (4, Fig. 1). The mucosa was chronically inflamed. A diagnosis of acromegaly of the larynx was made because of the following general signs of acromegaly; facies, gingerbread hands, kyphosis, and projecting os calcis. Disease of the hypophysis was demonstrated by Dr. Russell H. Boggs.

CONCLUSIONS

Four cases are too few for final conclusions, but the following points seem important:

1. The larynx should be examined in every case of hypophysial abnormality.
2. The overgrowth characteristic of acromegaly in some cases involves the laryngeal cartilages and soft parts.
3. Acromegalic changes in the larynx may produce stenosis sufficient to require tracheotomy to prevent asphyxia, dyspnea being added to by impairment of the glottic movements, resulting in a defective bechic cycle.
4. In three out of four cases, the laryngeal mucosa was normal. In one, the chronic laryngitis present was probably a coincidence.
5. In three of the four cases, the laryngeal image was not symmetrical, though the laryngeal enlargement seemed so by external palpation.
6. In all cases of apparent hyperplasia of the larynx, acromegalic overgrowth should be listed for diagnostic exclusion.

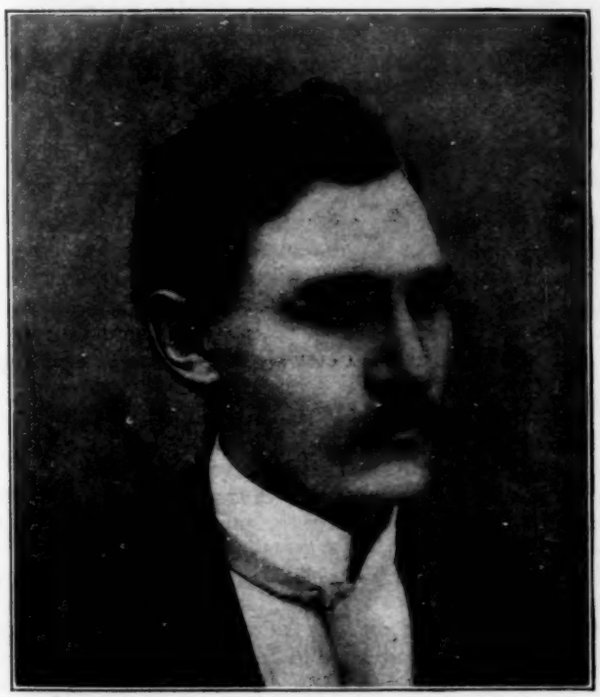

Fig. 4 (Case 1).—Patient at the age of 23.

7. Laryngeal examination should be recorded as a routine in all cases of hypophysial abnormality, for the accumulation of data.
8. Altered voice in acromegaly may be due to laryngeal changes as well as to alteration in the resonating cavities, lingual enlargement, etc.

ABSTRACT OF DISCUSSION

DR. WILLIAM B. CHAMBERLIN, Cleveland: I would like to ask Dr. Jackson if the general signs of acromegaly are essential, and in the absence of other signs how he would differentiate these cases from rhinoscleroma?

Fig. 5 (Case 1).—Overgrowth and ossification of the thyroid cartilage with extensive elongation, especially of the left cornu. (Roentgenogram by Dr. George C. Johnston.)

DR. CHEVALIER JACKSON, Philadelphia: Dr. Chamberlin brings out an exceedingly important point and I wish I could answer it. It has often been said of medical men that they get one case and make sweeping generalizations from it, and we often do. In this instance, there are only four cases, and, therefore, broad generalizations seem unjustifiable. I do not believe anybody could make a diagnosis of acromegaly by laryngoscopic examination alone: it would require the corroboration of the general symtomatology. As to the local points of differentiation between laryngeal acromegaly and rhinoscleroma, I feel that Dr. Chamberlin has raised an important point, but one that I cannot answer on the experience of only four cases.

For the present we must rely on the symptoms outside the larynx.

Removing Joint and Muscle Disabilities.—It is of the utmost importance to understand the use that can be made of a man's sound limbs to enable him to recover the use of an injured one. Attention is too much centered on obtaining some anatomically correct movement; meantime all the other limbs are allowed to remain inactive, and if the anatomically correct movement cannot be obtained, then the case is given up as incurable. Such concentrated treatment ignores the value of associated movements of joints brought about by the muscles passing over one or more joints. Take the case of a man who cannot flex one joint of the upper or lower limb, or who can only partially flex a joint. In addition to any special effort to flex that joint singly, it is important to get him to flex all the sound joints of the limb, which all tends to make him capable of flexing the injured one.—Col. H. E. Deane, Gymnastic Treatment for Joint and Muscle Disabilities.

THE TREATMENT OF GENITAL TUBERCULOSIS IN THE MALE*

WILLIAM C. QUINBY, M.D.
BOSTON

For the intelligent and therefore successful treatment of any surgical ailment an exact knowledge of its pathology and mode of invading the various structures of the body is most important. In the case of tuberculosis of the male genitalia such exact knowledge is in some respects lacking; especially in regard to the structures primarily attacked by this disease. At the present writing, the majority opinion holds that the first structure to become involved in the tuberculous process is the epididymis, and that from this the disease quickly spreads to involve the vesicle and prostate. A smaller number of investigators feel that the disease begins its genital invasion in the prostate, spreading from there to the vesicles and epididymis. This is a question which has long been argued, and is of much more than mere academic importance, because only by eradicating the primary focus may we expect the greatest number of cures.

In accordance with this majority opinion, that the tuberculous process begins in the epididymis, the operation of removal of this structure has been widely employed and in some instances has undoubtedly been followed by excellent results. By the operation, not only is the suppurating or tender focus in the scrotum disposed of, but also further disease either in the testis, or in the prostate and seminal vesicle may become quiescent. But that such a fortunate result cannot always be expected, and that our attempts to cure tuberculosis of the male genital tract by epididymectomy thus far leave much to be desired may be easily seen from the statistics collected by many surgeons. To mention two writers, Keyes[1] says, in speaking of tuberculosis of the testicle, "Relapse on the opposite side almost inevitably occurs." And from his table, it may be seen that, of fifty-three relapses in the other epididymis, forty-six had occurred within one year after operation on the side primarily diseased. Barney[2] says:

> It is a characteristic of the disease to attack the opposite epididymis in over one-half the cases, within a year or two of the time of involvement of the first side. This catastrophe occurs in spite of all efforts to prevent it, but early excision of the epididymis first attacked will improve the chances for the escape of its fellow.

Results such as these are hard to explain if we assume that the disease process is primary in the epididymis. On the other hand, they are easily explained if we consider the prostate and vesicles to be the point of first attack. If this assumption is made, it is evident that the focus nearer the center, untouched by the removal of the epididymis, is still present, ever ready to involve the second epididymis in the same manner as it did the first.

In what percentage of cases of tuberculosis of the epididymis are the prostate and vesicles free from this disease? It is evident that in the answer to this question lies the solution of our perplexity. The sources of evidence on which to base the answer thus far made use of are mainly two: necropsy findings, and clinical examination of the prostate and vesicles by digital exploration. Large series of postmortem statistics have been examined by various men, with the result that in an overwhelming majority of the cases the tuberculosis is found to involve the whole genital tract, at least on one side. Though a few isolated instances are recorded in which only the epididymis, the vesicle or the prostate was the seat of the disease, the number of such cases is far too small to be of weight in demonstrating the usual point of first attack. This can mean only that by the time the patient dies, the disease has progressed so far that its exact genital origin is obscure.

The clinical evidence that may be brought to bear on this question is even more insecure than is the postmortem, for it is admitted by nearly all clinicians that it is frequently impossible to detect the presence of tuberculosis in the prostate or vesicles, though the tuberculosis in the epididymis is obvious. On the other hand, Keyes makes the statement that every case of tuberculosis of the testis (epididymis) examined during ten years showed some involvement of the prostate.

For final conclusive evidence, it is therefore clear, I think, that we must turn to the "pathology of the living," that is, to the evidence obtained from histologic examination of tissue removed or investigated at operation. Though it may well be beyond the usual opportunity of any one of us to bring together an amount of such operative material adequate for the complete proof, nevertheless if the continued efforts of many working toward this end are made, we shall soon have our answer. It is, then, with the hope of stimulating a more general interest in this subject among urologists, rather than with the feeling that I am yet able to bring any final word on the subject, that I present this paper.

INVOLVEMENT OF OTHER ORGANS IN TUBERCULOSIS OF THE EPIDIDYMIS

As partial answer to the question, "In what percentage of cases of tuberculosis of the epididymis are the prostate and vesicles free from disease?" I am able to offer the histories of seven cases seen during the past two years at the Peter Bent Brigham Hospital. These patients have all been treated by complete removal of the whole of either one or both seminal tracts. The operation usually performed consisted of a unilateral vesiculectomy, vasectomy and epididymectomy; the operator using practically the same method which Dr. Young[3] has recently published. A small area of prostate was also removed when it could be demonstrated to be diseased.

Stated briefly, the answer which these cases bring to our question is that in *no* case were those structures central to the epididymis found free from tuberculosis, and that therefore the percentage is zero. Of course, I do not expect this result to obtain when a much larger accumulation of such operative evidence is available. It is interesting, nevertheless.

It is also of interest to note that, though I have been unable to find an epididymis which was tuberculous without there being at the same time a demonstrable

* From the Urological Clinic of the Peter Bent Brigham Hospital, Boston.

* Read before the Section on Genito-Urinary Diseases at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

1. Keyes: Tuberculosis of the Testicle; Observations on 100 patients, Ann. Surg., 1907, **45**, 918-937.
2. Barney: Genital Tuberculosis, Mod. Urol., 1918, **1**, 498.
3. Young, H. H.: Presentation of a Radical Operation for Tuberculosis of the Seminal Tract, Surg., Gynec. and Obst., 1918, **26**, 375.

tuberculosis of some more central portion of the genital tract, there has come under my observation a case of tuberculosis of the prostate in which the process was confined to this organ, or at least in which the epididymides showed no abnormality. The patient was operated on by prostatectomy, and has thus far shown no tuberculosis elsewhere in the genital tract. It is added to the cases herein reported, which may be briefly summarized here.

The average age of the patients was 28, the oldest being 33 and the youngest 25. Four were single and three were married. The time from onset of evident disease in the epididymis till operation averaged about three months, with one exception in which the process was present for two years and nine months. In two cases both prostate and vesicle gave palpatory evidence of being diseased, while in three cases the vesicles only could be positively felt to be abnormal. In two cases the rectal examination was entirely negative. In three cases the urine contained pus; in four it was normal. In no case could evidence of renal or bladder tuberculosis be demonstrated. Five patients had a discharging sinus in the scrotum before presenting themselves for operation.

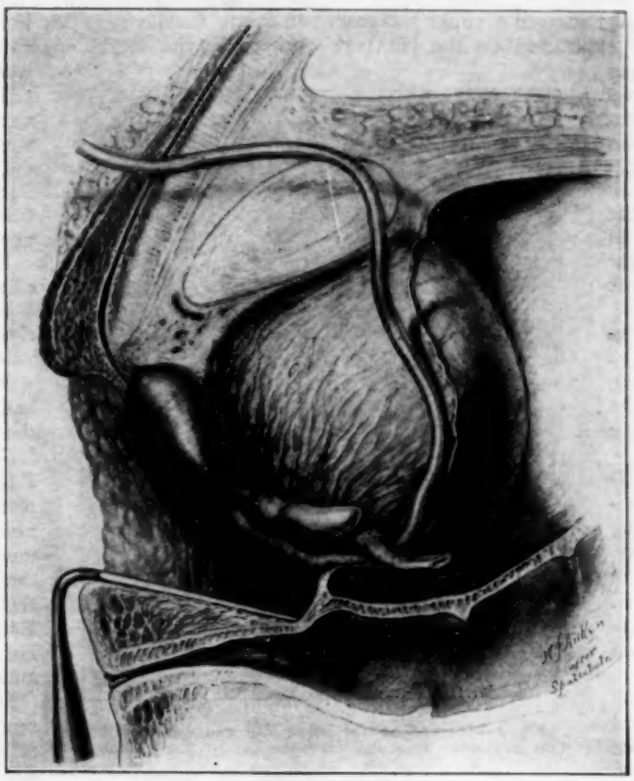

Fig. 1.—Sagittal section of male pelvis showing approach to vesicle by division of structures which unite the rectum and bulb of urethra. Note relation of ureter to vas and also pouch of peritoneum behind bladder.

CLINICAL RESULTS OF OPERATIONS

Each of these patients has been seen within the past month, six having reported personally at the hospital. One was seen by the nurse of the social service department. Only one patient has done badly and this poor result is clearly due to an error of surgical judgment in not removing the whole of a very evidently and extensively diseased vesicle. Two months after this operation, the other epididymis and testicle became extensively diseased and had to be removed. The patient is now well. With this exception, the history after operation in each of the remaining cases has been one of apparent return to complete health. In no other of them has there been any evidence of further extension of the tuberculosis. One patient underwent an acute infection by the gonococcus fifteen months after operation, and after four weeks of self-medication this resulted in an acute gonorrheal epididymitis of the side not operated on.

The average time since operation is thirteen months. This is not nearly so extensive a time as is necessary for conclusions in regard to recurrence of tuberculosis. I am sure that it is sufficient, however, to demonstrate that this more radical method of operation does not carry with it any unusual or unjustifiable complications or risks. I have not attempted the operation, however, in any case which showed signs of active tuberculosis elsewhere in the body.

CASES OF TUBERCULOSIS OF EPIDIDYMIS TREATED BY EXCISION OF ENTIRE SEMINAL TRACT

CASE 1 (No. 5920).—*History.*—A student, aged 25, single, Dec. 18, 1916, complained of swelling and discharge from right testicle for four months. The family history and past history were both negative. There was no venereal disease. Four months previous to consultation, while working as a porter in a summer hotel, the patient had lifted a heavy piece of ice and noted pain in his right testicle. The pain had been followed by swelling, which had lasted from four to five days, at the end of which time the patient had seen a doctor. The doctor had aspirated it, obtaining a small amount of bloody fluid. The pain had then disappeared, but the swelling had remained, had increased slightly in size, and through the aspiration point, the patient had had a yellowish discharge. There were no night sweats, no cough, no urinary disturbance and no loss of weight.

Physical Examination.—Lungs were negative. Over the lower pole of the epididymis on the right was a small sinus discharging a thin, seropurulent material and here the skin was slightly puckered. The epididymis was considerably enlarged throughout but was not tender. The testicle appeared to be normal. The left testis and epididymis were not remarkable. The rectal examination was negative. The urine was normal.

Dec. 19, 1916, right vesiculectomy, vasectomy and epididymectomy were performed. The structures removed included an adjacent nodule in the prostate.

Jan. 4, 1917, the patient was discharged after a rather stormy convalescence. He had to be catheterized for several days, and the perineal wound oozed considerable bloody serum. The perineum had nearly healed on his leaving the hospital.

Pathologic Report.—The patient was suffering from tuberculosis of the epididymis, vas, seminal vesicle and prostate.

Subsequent History (outdoor department).—Jan. 12, 1917, the perineum was healed, and the scrotum nearly so. There was considerable induration in the right scrotum and cord but this was not tender. Erections had been present. There was no difficulty in regard to urination. The urine was clear, with a few granular shreds. It was passed at normal intervals.

Feb. 10, 1917, the patient had gained 8 pounds. The scrotal wound was not then entirely healed.

March 10, a sinus appeared in the perineum discharging a few drops of pus intermittently.

August 24, the sinus remained closed almost entirely. The patient had been working hard and had lost a few pounds of weight previously gained. He was put on a course of tuberculin.

October 1, during the summer vacation the patient showed marked improvement. There had been no further discharge from the sinus since the last note. He had gained about 15 pounds.

May 28, 1918, the patient reported that although he had been working hard during the past school year, his health had been excellent. Examination on this date proved both testes normal, the right being minus its epididymis. By rectal palpation, the prostate felt normal, but there was a small depressed area at its upper right side over which the rectal mucosa was puckered. The left vesicle could not be palpated. The expressed prostatic secretion was normal under the microscope and no pus was found. Spermatozoa were absent, however. The urine was normal in all respects.

Case 2 (No. 5880).—*History.*—Dec. 11, 1916, a laborer, aged 27, single, complained of swelling of the scrotum. The family history was negative. There was a rather vague history of pleurisy five year's previously and of gonorrhea eight years previously. The trouble began about six months before with pain in the groin and the scrotum. At this time an incision was made in the scrotum, which continued to discharge. A week previously the swelling and tenderness had increased. There were no urinary symptoms. The patient thought he had lost some weight but he did not know how much.

Physical Examination.—The lungs showed a slight increase of dulness with prolongation of expiration on the right at the apex. The roentgenogram was negative except for slight haziness in the region of the right apex. The left testis was three times its normal size on account of involvement of the whole epididymis. In the region of the lower pole, the skin was adherent about a sinus tract. The contents of the right scrotum were normal. The left cord was definitely thickened. By rectal palpation, no abnormality could be felt in the prostate. The left vesicle was definitely thickened, the right questionably so. The microscope showed that the urine contained a little pus and blood.

Dec. 13, 1916, vesiculectomy, vasectomy, epididymectomy and orchidectomy were performed on the left side. No evidence of prostatic involvement was to be seen. The right vesicle was normal, the left enlarged and adherent. Orchidectomy was done on account of an extensive necrosis of the testis.

December 23, the inguinal incision still discharged considerably and had become slightly infected. The perineal wound was nearly healed.

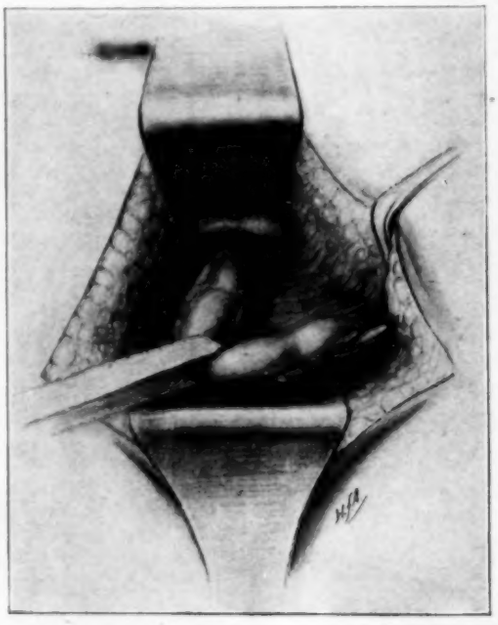

Fig. 2.—Method of traction on vas and vesicle after they have been separated from the base of the bladder.

Jan. 3, 1917, the inguinal wound was completely healed. The wounds in the lower part of the scrotum (area of original sinus) and the perineum still discharged a little. The urine was normal. The patient was sent to the outdoor department for dressings.

Pathologic Report.—He was suffering from tuberculosis of the testis, epididymis and seminal vesicle. The patient continued to have dressings for the slowly healing sinus in the outdoor department till Sept. 13, 1917. His general condition was excellent.

Subsequent History.—March 19, 1918, he reentered as No. 8392. Almost two months later he had acute urethritis five days after exposure. He used self medication in part and had a swelling and tenderness of right epididymis. Gonococci were found in the urethral discharge. His fever rose as high as 103 F. No tenderness was discovered by rectal palpation.

March 29, 1918, the process had run the usual course of a gonorrheal epididymitis. There was then much less soreness and swelling and the urethritis was only moderately severe. No evidence of recurrent tuberculosis had been seen. The patient was discharged to the outdoor department.

May 1, 1918, he was still under treatment for prostatitis. The epididymis was practically normal, except for an occasional small nodule. The urine was clear, without shreds.

Case 3 (No. 6017).—*History.*—Jan. 4, 1917, a butcher, aged 28, married, complained of swelling and slight pain in the left testicle. The family history was negative. He had had gonorrhea nine years before. He had not lost weight. He had been married seven years, and six years previously had had a child. Three and one one-half months before consultation, the patient fell, striking the lower part of his back. A week later the testis began to swell and grow painful. For two weeks it had grown worse and had remained of the same size since. Walking was painful, though somewhat helped by a suspensory. There were no urinary symptoms.

Physical Examination.—The lungs and the right genitalia were normal. The left scrotum was twice the size of the right. The upper pole of the epididymis was nodular and hard, and the rest of the epididymis was definitely thickened. The cord was somewhat thickened. The skin was not adherent. By rectal palpation it was found that the left vesicle had one nodule near its top which could not be expressed, otherwise the rectal examination was negative. The urine was normal.

Jan. 6, 1917, left vesiculectomy, vasectomy and epididymectomy were performed. The vesicle was only slightly adherent. One small nodule in the prostate at the entrance of the ejaculatory duct was excised.

Jan. 9, 1917, the wounds were clean and healing well.

January 14, the patient was discharged after an uninterrupted convalescence.

Pathologic Report.—The patient had tuberculosis of the prostate, the seminal vesicle and epididymis.

Subsequent History.—Jan. 23, 1917, the wounds were solid. There was an entire absence of tenderness by rectal palpation. The rectal mucosa was more thick and velvety than usual over the prostate. The remaining vesicle was not palpable. The patient soon gained in weight. He was put through a course of antituberculous hygienic treatment.

May 27, 1918, the patient came to report. His health had been excellent since the operation. He had gained 4 or 5 pounds. He had coitus normally three or four times a week, but his wife had not borne a child since the one of six years ago. Both testes were rather small and somewhat atrophic. The left one, except for the absence of the epididymis, was the same as the right. The rectal examination was normal except for a few small adhesions of mucosa to the underlying structures. There were no urinary symptoms. It was impossible to obtain prostatic secretion by expression for examination. The urine was normal.

Case 4 (No. 6698).—*History.*—May 7, 1917, a storekeeper, aged 30, single, complained of a swelling of the testicle. The family history was negative. He had not had gonorrhea.

March 5, 1917, he had observed on walking that the left testis was swollen, tender and painful. He had stayed at home five days on account of the pain. The swelling had gradually decreased, but had not disappeared. Ten days previous to consultation, he had observed a soft area at the lower part of the scrotum which had broken and discharged pus a day before. There were no urinary symptoms. During the previous six months he had lost 8 pounds.

Physical Examination.—The lungs were normal. The left testis was slightly enlarged. The epididymis was swollen

hard and nodular in both the upper and lower poles, and the lower part of the swelling had become adherent to skin about a fistulous tract. The cord was not thickened. The contents of the right scrotum were normal. No involvement of the prostate or testicles could be palpated. The urine was normal.

May 8, 1917, vesiculectomy, vasectomy and epididymectomy were performed on the left side. The left vesicle was found very rudimentary and evidently not diseased. No diseased areas of the prostate could be palpated. The ampulla of the vas was somewhat thickened.

May 20, 1917, the patient had made an absolutely uninterrupted convalescence and was discharged to the outdoor department for dressing of a small sinus in the scrotum.

Pathologic Report.—The patient had tuberculosis of the ampulla of the vas deferens and of the epididymis.

Subsequent History.—May 24, 1917, in the outdoor department, a stitch, which was causing slight discharge from the scrotum, was removed. A dry dressing was used.

June 6, 1918, he was seen by the nurse of the social service department. He had been entirely well since the previous visit.

CASE 5 (No. 7266).—*History.*—Aug. 24, 1917, a sailor, aged 26, single, complained of deformed testes. The family history and past history were negative. There was no evidence of tuberculosis.

In May, 1914, he hurt his testicles in jumping a fence, and two days later passed bloody urine, with no pain, however. The condition lasted three weeks and stopped suddenly. The patient did not stop work. The left testis was at first swollen, then gradually diminished to the size of a robin's egg. He was then well till September, 1914, when the right testis became sore and swollen at the lower end. The swelling persisted but the pain disappeared.

August, 1917, the left side, which had been small since May, 1914, began to swell again in the lower pole, and to be painful. There were no urinary symptoms.

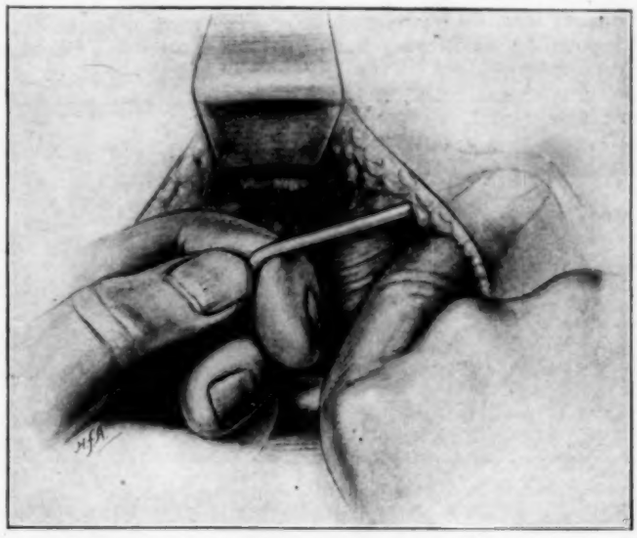

Fig. 3.—Separation of ureter from vas. The vesicle has been entirely freed, and firm traction is being made on the pelvic portion of the vas.

Physical Examination.—The lungs were negative. The right testis was about normal in size. The lower pole of the epididymis was enlarged, but not inflamed or painful. Above the testis was a discrete mass, the size of a marble, connected with the cord. The left epididymis was swollen more than the right and more diffusely indurated. The vas was slightly enlarged for a short distance above the testis. The scrotum was not involved. The prostate was about normal size, and of somewhat increased hardness, with a nodule in the left lobe. There was no pain on pressure. The seminal vesicles felt as nodular masses rising above the prostate, the left one being somewhat more marked than the right. The urine contained a few pus cells, as the microscope showed.

Aug. 27, 1917, double vesiculectomy, vasectomy and epididymectomy were performed. The left vesicle was more recently inflamed than the right, which was fibrous. No definite nodules were to be found in the prostate.

August 30, all drains were removed. The patient was free from pains and his general condition was good.

September 7, all wounds were healed.

September 12, he was discharged in good general condition. The scars were perfectly healed. The testes were slightly indurated, but were not at all painful. There was no ecchymosis. The urine still contained a little pus.

Pathologic Report.—The patient was suffering from tuberculosis of both epididymides and seminal vesicles. The vasa showed no change. A pig inoculated with the urine, Aug. 28, 1917, and killed Sept. 26, 1917, showed no sign of tuberculosis. The disease affected the left side for two years and nine months, and the right side for two years and seven months.

June 3, 1918, he was at work and in splendid health. He had gained from 15 to 18 pounds. Coitus was normal, but not as frequent as before. The testes were of normal size and freely movable in the scrotum. The cords were not thickened. By rectal palpation the prostate felt normal. At its upper limit, there was a definite shelf left by the removal of vesicles. The rectal mucosa was somewhat adherent. The urine was clear and acid, with a specific gravity of 1.014, and with no albumin and no sugar.

CASE 6 (No. 6468).—Oct. 3, 1917, a barber, aged 33, married, complained of swelling and abscess on the left side of the scrotum.

History.—The family history was negative. The patient had been married twelve years and had eight children. He had had chancroid at 17 years of age and gonorrhea at 18. He had experienced no urinary troubles since. For the previous five months he had noticed that the urine had not been as clear as usual. He had observed swelling and pain in the left testicle about twelve weeks previous to consultation. There was no history of infection or trauma to account for the condition. The pain was of a dull aching character, relieved considerably by warm applications and a suspensory. A week later the patient felt perfectly well. The pain recurred in two weeks and the swelling, which persisted to date of consultation, finally led to an abscess which was later incised. He lost 10 pounds in two weeks.

Physical Examination.—The patient was a pale, poorly nourished Jew. The lungs appeared to be normal. The left scrotum was distinctly larger than the right, because of a large firm testicle and epididymis. The skin of the scrotum was adherent at the globus minor in the area of the previous incision. The cord seemed normal. The structures of the right scrotum were normal. Rectal examination showed a prostate somewhat larger than normal, but not tender or nodular. The left seminal vesicle was readily palpated as a hard, indurated, enlarged area above the prostate. The right vesicle was not definitely palpated. The urine contained considerable pus.

Oct. 5, 1917, vesiculectomy, vasectomy and epididymectomy were performed on the left side. The vesicle was markedly adherent, and the operative exposure not all that could be wished. Therefore the whole of the vesicle was not removed. As will be seen later, this was a definite error of surgical judgment.

Pathologic Report.—The patient had tuberculosis of the epididymis, vas and vesicle.

Subsequent History.—He made rather a slow convalescence. For several days he had an obstinate, moist, bronchial cough. The temperature was 102 F. on the sixth day. This ceased and the temperature became normal. The wounds healed slowly, especially that in the perineum which was still discharging a very little at his departure from the hospital, Nov. 2, 1917.

Dec. 4, 1917, it was found that though advised as to hygiene, diet, etc., the patient had been taking no care of himself at all. He had been working for the previous three days and had felt pretty well. The sinuses had not healed, however, and the day before the right testicle had become swollen and tender. There was a slight frequency of urination with

slight terminal pain. There were no chills or cough. On examination, the right epididymis was slightly enlarged, but not nodular or fluctuant. Throughout the whole palpable course of the vas, there was extreme tenderness.

Dec. 14, 1917, he reentered the hospital as No. 7856. The process in the right scrotum had rapidly increased. The swelling was the size of a large lemon and the testicle and epididymis could not be differentiated. Rectal examination did not reveal any further involvement in the region of the prostate, but on the left side there was a boggy induration in the region where a portion of the vesicle was allowed to remain, and this was probably related to the persisting perineal sinus.

December 19, right orchidectomy was done. The testicle was found extensively involved by disease, and so removed, together with the epididymis and as much of the vas as could be secured by drawing it down from above.

December 23, a residual abscess appeared at the level of the internal inguinal ring on the right side. This was opened under cocain.

Jan. 24, 1918, the patient made a poor convalescence. He had hectic fever, especially at night, and did not react to forced feeding and antituberculous hygiene. The sinuses were treated with bismuth iodoform petrolatum paste.

Feb. 1, 1918, he was discharged though the sinuses still persisted.

June 5, 1918, he came to report that he was in a surprisingly good condition, having gained 10 pounds since leaving hospital. He spent the summer at the seashore and worked one day only each week. There was a minute sinus in the right groin and one in the right side of the perineum, but these discharged so little that no dressing was needed. The urine contained a little pus by microscopic examination. Coitus was normal but there was no ejaculated fluid.

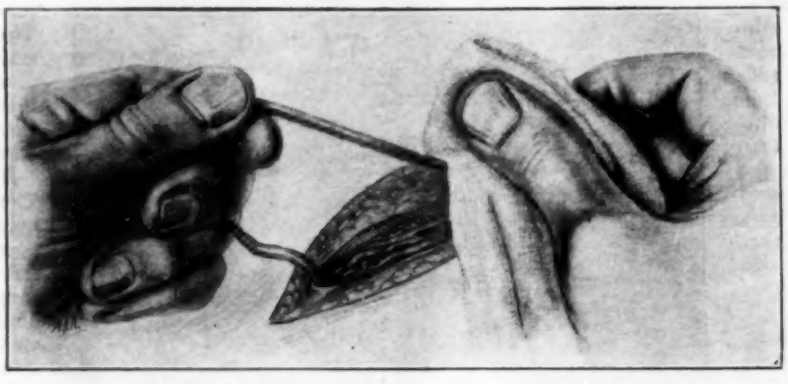

Fig. 4.—Inguinal incision. The spermatic cord from which the vas has been separated shows in the bottom of the wound. Traction is made on the vas, and at the same time the surrounding structures, together with the peritoneum, are wiped back by a gauze sponge.

Case 7 (No. 8326).—*History.*—March 7, 1918, a riveter, aged 26, married, complained of a swollen testicle. His mother had died of tuberculosis. He had been married three years and had one child 22 months old, who was well. He had had no cough or night sweats. He had lost 20 pounds in the previous two months. Six weeks before consultation, he had felt a dull pain in the scrotum. A week later he had experienced a swelling and tenderness in the left side of the scrotum, had felt poorly and could not work. He had stayed in bed and used poultices for the swelling which began to suppurate the previous week. Since his illness he had urinated once during the night. There were no other urinary symptoms.

Physical Examination.—Tactile and vocal fremitus increased at right apex posteriorly. There was dulness on percussion down to the midscapular region. There were no râles. There was an extensive involvement of the left epididymis by a low grade suppurative process, which was undoubtedly tuberculosis. The epididymis was enlarged at least five times its normal size, and at its upper pole, as well as at the lower, the disease had involved the skin, which at the upper pole had broken down and formed two sinuses. The contents of the right scrotum were normal. There was evidently no thickening of the cord on the left. By rectal palpation, there was a nodular thickening in the region of the left vas. The prostate felt normal, as also did the region of the right vas. The urine was normal.

March 8, 1918, vesiculectomy, vasectomy and epididymectomy were performed on the left side. The prostate was evidently not involved. A rather excessive adhesion of the vesicle to its surroundings caused moderate hemorrhage, easily controlled, however.

March 14, all drains were removed. The patient was comfortable, but for two days after operation, he complained of gas pains.

March 18, the perineal wound was well healed, and the one in the scrotum was granulating.

March 22, the fourteenth day, he was discharged in good condition. He had been out of bed for five days. There had been no fever since the operation. The slight discharge of seropurulent material from the area in the scrotum that remained was to be dressed for the patient in the outdoor department.

Pathologic Report.—The disease was tuberculosis of the epididymis, the vas deferens, and of the vesicle.

Subsequent History.—June 3, 1918, the sinus in the scrotum was healing slowly. The patient had gained 9 pounds and was stronger though he had not yet worked. The urine was normal.

Case 8 (No. 5987).—*Tuberculosis of the prostate; normal epididymides.—History.*—Dec. 30, 1916, an ex-policeman and ex-woodcarver, aged 67, a widower, complained of difficulty in passing water. The family history was negative. The patient's health had always been excellent. He had had gonorrhea forty years ago, though he denied syphilis. For the previous eight years he had been having gradually increasing difficulty in starting the stream, together with some increased frequency. There was no hematuria. Two weeks previous to consultation after an excessive amount of alcohol he had great increase in frequency, urgency and dysuria. Three days before he had had retention and at time of consultation he had not been able to empty the bladder for twenty-four hours.

Physical Examination.—No evidence of tuberculosis was to be found. The lungs were clear. Systolic blood pressure was 148 and diastolic 88. The bladder was distended to within 2 cm. of the umbilicus. The report of the rectal examination was missing.

December 30, suprapubic drainage of the bladder was accomplished under local anesthesia. About 1,200 c.c. of urine were withdrawn. Exploration of the prostate revealed marked hypertrophy of the median lobe.

Jan. 5, 1917, the general condition was much better. Suprapubic prostatectomy under ether was performed. Three lobes were removed, the left being markedly enlarged as was also the median, while the right lobe was about normal in size. The line of cleavage was easily found for the lateral lobes. The median lobe was less discrete and had to be removed with scissors in part. There was but little bleeding.

Pathologic Report.—The patient had tuberculosis of the prostate with glandular hyperplasia and chronic prostatitis.

Subsequent History.—Jan. 12, 1917, he was in good condition, being out of bed.

January 16, there was no longer any leakage of urine from the wound.

January 19, he was discharged in good condition.

Jan. 25, 1917, he reported that he rose three times each night to urinate. The urine was turbid. The catheter found 20 c.c. residual. He was to have bladder lavage with silver nitrate each week.

May 3, 1917, he was in good condition. There was no residual urine. There was a slight right hydrocele; otherwise

the testes were normal. He was much disappointed that since the operation he had lost potency.

May 27, 1918, he reported that he had been entirely well in regard to the urinary system since the preceding year. He complained only of dizziness and constipation. The dizziness was evidently due to arteriosclerosis. The urine still contains a few pus shreds. The testes were symptomless, and except for the slight hydrocele noted in the foregoing, they were normal.

PATHOLOGIC FINDINGS

An extensive and searching pathologic investigation of the material obtained from this series of cases has been planned, but because of the unfortunate exigencies of the times, has not yet been completed. I regret that this is the case, and will ask your indulgence till opportunity offers when such results will form the basis of a subsequent communication. From a superficial histologic examination of the material, my impression is that the tuberculosis in the prostate or vesicle calls forth a tissue reaction of the chronic inflammatory type, characterized later by a considerable amount of connective tissue formation, in which caseation and liquefaction necrosis are but little marked. In the epididymis, however, the process is much more commonly a destructive one, leading to early necrosis and suppuration. We have here a notable analogy to the condition characteristically found in the tonsil on the one hand, and the cervical lymph node on the other.

Is the tuberculosis of the prostate and vesicle as seen in this material an older process than that of the epididymis? I am strongly of the opinion that it is, although I cannot definitely say so at present, for reasons previously mentioned. Certainly the findings thus far made are consistent with this assumption.

SUMMARY

Since it has been demonstrated that seven cases bearing tuberculous epididymides had a central area of infection with this disease at the time of operation, may it not be that many of our bad results, after the removal of the epididymis, are due solely to a misconception of the mode of invasion? Pathologic and clinical evidence of the past has not been able to afford a sure knowledge of this subject. The evidence which the cases under discussion offer is at least consistent with the hypothesis that when the male genitalia are affected with tuberculosis, this occurs first in the prostate or vesicle, to extend later to the epididymis. After removal of the entire seminal tract on one or both sides, the results are at least as good as those following epididymectomy alone. My belief is that the future will show that they are much better.

ABSTRACT OF DISCUSSION

DR. J. DELLINGER BARNEY, Boston: I was very much interested in Dr. Quinby's paper. We have now about two hundred cases which have been followed from a few months to several years since operation. It seems to me that the evidence is overwhelming, that the primary focus is not in the prostate or seminal vesicle, but in the epididymis. My reasons for this view are simple. Why is it that when the epididymis is removed on one, or particlarly both sides, the process in the seminal vesicle or the prostate will quiet down? This has taken place in all but two or three of our cases. In these cases there was a continuance of the process, with rupture of an abscess sometimes into the perineum—once, I believe, into the rectum. But in all other cases the prostate and the seminal vesicles which were markedly indurated and clearly tuberculous before operation, subsequently quieted down, resulting in a clinical cure. Also the tuberculous bladders have quieted down symptomatically and cystoscopically. It seems to me that this in itself is almost a sufficient answer.

I had occasion two or three years ago to go over the entire literature of the subject, and found that primary tuberculosis of the seminal vesicle or of the prostate was excessively rare, whereas secondary invasion from the epididymis, was almost constant. I have been informed by competent pathologists that it is sometimes impossible to tell the age of a tuberculosis process by either the gross or microscopic appearances.

I have great respect for the operations which Dr. Quinby has performed; but it is my belief that it is impossible to remove tuberculosis by such an operation, because by the time the diagnosis can be made, the process has spread outside of these organs and the lymphatics are involved. I do not believe that his, or any technic, will enable us to clear it all out.

DR. J. P. O'NEIL, Chicago: I think we are all agreed that these cases of tuberculosis are primarily surgical; but I do not believe that we should stop there; it is essential to eradicate the primary focus as much so as in the treatment of tuberculosis. I have used mostly Koch's old tuberculin in dilutions of 1 to 10, 1 to 100, and 1 to 1,000; and as high as 1 to 100,000. In all of these cases I started in with tuberculin immediately after the operation, or as soon afterward as possible.

If possible I make the injection about 4 o'clock in the afternoon. About twenty-four to twenty-eight hours after the injection a temperature reaction appears with a local reaction at the area primarily involved. I have found that we may have no temperature reaction until 48 hours afterward. I have often seen it go as long as 72 hours afterwards before a temperature reaction appeared. I think the temperature reaction did not go above 99.6 F. I believe that when we get above 99.6 F. we get above the opsonic index which we are really trying out there.

Many of these cases usually show no temperature reaction at all for six or seven days afterward. They will have merely the general reaction. You must be careful about increasing the doses. You should give about the same doses for two or three weeks at a time if the temperature reaction does not go above that. Provided you have no reaction you can increase the dosage one drop. I give tuberculin usually seven or eight days apart. My aim is to bring them, if I can, up to the point where I give them pure tuberculin eventually, that is, one drop of pure tuberculin without getting a reaction. It takes possibly two years or more to reach that point; but the effect that I have seen is in the abatement of the symptoms more than anything else. You must see that their living conditions are as good as possible. Pure tuberculin, if it is legitimately used, should be used in every case, because general tuberculosis or kidney tuberculosis is an adjunct following the treatment.

DR. JAMES A. GARDNER, Buffalo: I should like to ask Dr. Quinby about the number of sinuses that he has after this operation. It appeals to me as a very clever one, but in our hands we have found that an operation on the vesicles was much like an operation on the kidney; that we usually had tubercular tracts in spite of all we could do. Within the last few years, a municipal sanatorium at Perrysburg near Buffalo, was opened where there was administered the Rollier or sun treatment. I think the practitioners in Buffalo did not think very much of it until it had been established two or three years, and then a number of so-called hopeless cases, not only urinary cases, but bone tubercular cases—which they were glad to get rid of—were sent out there. They give a program at the Buffalo Academy of Medicine one evening during the winter at which they exhibit a number of these cases, and also show photographs and moving pictures. We were shown a number of cases which we felt were practically hopeless that had improved wonderfully. We have felt since that if we can remove some of the foci and send them there to be treated that they clear up reasonably well. I should be glad to hear what Dr. Quinby has to say about end results.

Dr. Oswald S. Lowsley, New York: When I was in Cincinnati recently, a gentleman whose name I do not just remember now, called my attention to an article he had written on the effect of ether anesthesia on early tuberculosis lesions. In this article he called attention to the fact that in certain pulmonary conditions where in operations it had been necessary to employ ether anesthesia the patient had derived some benefit when the disease was not too far advanced. He quoted a number of cases to bear this out; and on my return home I gave two or three patients ether anesthesia in connection with cystoscopy which was painful, in order to determine the truth of his assertions about kidney tuberculosis. They did show some improvement of their tuberculosis lesion; they both gained slightly in weight, and improved as regard their other symptoms. They were both early cases. What I did to them had absolutely nothing to do with their treatment, it was simply a matter of investigation.

Dr. W. C. Quinby, Boston: I am thankful to Dr. Barney for making the very frank remarks that he has, because my point in presenting this paper was to bring this subject to your attention; recognizing very well, indeed, that our treatment is not yet a final one. It was far from my intention to try to do unnecessary operating. That is not justifiable, and if we can definitely know that the removal of the epididymis is sufficient, I will be the first person to agree. But Dr. Barney is not consistent. He said that of about 200 cases of tuberculous epididymides, in all but two or three instances the disease in the prostate and vesicles has quieted down after the removal of the epididymis, and that there has been no recurrence. If the results of epididymectomy only, are as good as this, then there is no earthly point in these operations which I have been doing. But this recently mentioned very small number of recurrences is not what Dr. Barney has gone on record in print as finding from his statistics; neither is it shown by the statistics of any other men. Therefore I maintain that he is not consistent.

When one begins to draw deductions from embryologic sources on which to base the physiologic function of an organ of the body, one is treading on very insecure ground indeed. To consider the testicle an excretory organ because in its embryology it takes origin near the kidney, is no more logical than to consider the suprarenal an excretory organ simply because it takes origin in the embryo near the kidney in the general region of the wolffian body. This is no proof at all; it is a theory merely, fabricated to explain the clinical situation. To my mind it explains nothing whatsoever.

In regard to the pathologic question as to how one can tell the age of a tuberculous process, I quite agree with Dr. Barney that it is a very difficult thing to do, and for this reason I have been unwilling as yet to make any definite statement in regard to the material which I have secured by operation. I have the opinion of three or four pathologists whom we all recognize as being men of ability that it will probably be possible to tell the age of the tuberculosis when one has the whole tract for examination. It was planned to make an extensive serial section study of all this material, but this has not yet been done, because my technician has gone to the war.

Dr. Barney makes the point that it is impossible to remove all the tuberculosis. I quite agree with him. I do not pretend to remove all the tuberculosis. The outcome of surgical tuberculosis is improved by the removal of a certain amount of tuberculous tissue to give the patients' bodily forces and powers of resistance a sufficient opportunity to combat what remains. I feel in regard to these genital cases that they are in no sense different from those bearing a tuberculosis of the bowel or of the cervical glands. The problem is the same in all of them. If the surgeon states that by operation he is removing all the tuberculosis in the patient's body he merely illustrates his ignorance of the pathology of the disease. I do not feel that this operation which I have done removes all the tuberculosis. I do feel that, if the statistics which we have in hand showing that about half the cases suffer recurrence after a simple epididymectomy are correct, this makes it evident that there has not been sufficient tuberculosis removed to give the patient a chance to overcome the disease. Therefore more of the disease should be attacked than is done by the performance of a simple epididymectomy.

I agree with Dr. O'Neil's remarks concerning tuberculin. All of my patients have been put on a strict antituberculous hygiene and this includes regular visits to the hospital. They are also looked after by the social service department and they are given "old tuberculin."

In regard to Dr. Gardner's question about sinuses in the perineum following operation, this is an important point, and is the strongest argument which has previously been advanced against the perineal operation in tuberculosis. There was only one occasion in which the perineal sinus discharged for as long as three months, and in no case was there enough discharge to amount to anything.

I have not had any experience in regard to the subject discussed by Dr. Lowsley. Almost invariably all my operative work in urinary or genital cases is done under nitrous oxid anesthesia.

Dr. J. Dellinger Barney: Will Dr. Quinby please state the point that he is in doubt about?

Dr. Quinby: I quoted what you had published in an article written about two years ago. You said "It is characteristic of the disease to attack the opposite epididymis in over one half the cases, within a year or two of the time of the involvement of the first side. This catastrophe occurs in spite of all efforts to prevent it, but an early excision of the epididymis first attacked will improve the chances of its fellow;" and this statement is in direct accord with the statement made by Dr. Keyes, Jr., several years before. You now tell of cases to the number of 200 or more which you have personal knowledge of, and in only two or three of these did the genital tuberculosis of the vesicle or prostate fail to quiet down after the epididymis was removed. It is evident that these statements are not consistent.

Dr. Barney: I see your point of view. I think that the situation is this, and it will answer Dr. Quinby's question and straighten out the matter. Recurrence or relapse occurs on the opposite side in about 50 per cent. of the cases. This we have considered to be due to involvement of the prostate and vesicles from the first epididymis, but after removal of the first epididymis the process in the prostate and seminal vesicle quiets down in about 50 per cent. In the other 50 per cent. the process in the prostate or seminal vesicle does not subside before involvement of the second epididymis takes place. We have divided the second vas at the time of the removal of the first epididymis, or have taken out a section in the hope of preventing a recurrence on the second side, and have found the latter measure very successful. Where sterility can be shown to exist, as it does in most instances of this nature, no harm is done. It is also true in the cases where both epididymides have been taken out, with two or three exceptions, that the prostate and the vesicle which were previously tuberculous have quieted down to the extent that they are clinically cured. In other words, unilateral epididymovasectomy will retard a tuberculous process in the prostate and seminal vesicle and prevent relapse on the opposite side in about half the cases; in the other half the second epididymis becomes involved in spite of the removal of its fellow. After bilateral epididymovasectomy either at one or two sittings the prostate and seminal vesicle become clinically cured. Does this remove the apparent inconsistency of my remarks?

Health and Economic Loss.—I cannot estimate the economic losses that occur daily or yearly because of inefficient health and unsuccessfully treated disease. Great economists have tried but their estimates can never even approximate the real loss. There are other losses of greater importance than the economic losses. They are world losses in intellectual output; losses in public service; losses in ideal, commercial, professional, educational and religious progress; and, greatest of all, losses in human happiness—which follow this world-wide careless waste of human health and human life.—T. A. Storey, M.D., Ph.D., on Physical Training.

SOME NEW INSTRUMENTS IN OPERATIVE CYSTOSCOPY *

BRANSFORD LEWIS, M.D.
ST. LOUIS

PROSTATIC INCISOR

The pathologic reality and the various serious consequences of the condition known as contracture of the vesical neck are now well established. Endeavors

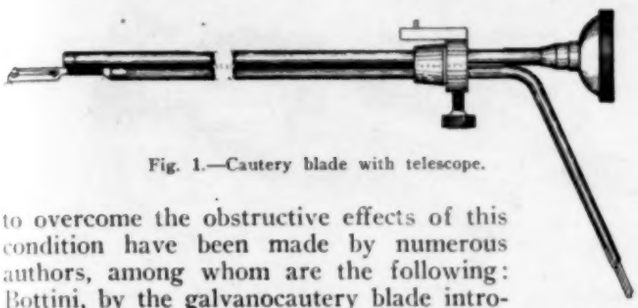

Fig. 1.—Cautery blade with telescope.

to overcome the obstructive effects of this condition have been made by numerous authors, among whom are the following: Bottini, by the galvanocautery blade introduced through the whole urethra; Chetwood, by the same method applied through a perineal incision; Young, by punching out a section of the constricting neck. And Bugee has used high-frequency fulguration with the ordinary insulated wire.

Two years ago or longer the desirability of opening the constricted channel without the perineal urethrotomy of Chetwood, or the strong tendency to hemorrhage induced by the punch operation of Young, was impressed on me. It was thought that some mode of applying fulguration more effectively than could be done by the wire was the desideratum. An iridoplatinum blade suggested itself.

With the assistance of the Wappler Electric Manufacturing Company and Mr. William A. Phillips, the instrument presented in Figure 1 has been evolved.

It consists of the blade mentioned, attached to a well-insulated wire, the center of a flexible shaft, capable of being attached by clips to either the direct or indirect telescope of my universal and operating cystoscope and utilized under direct observation of the operator.

The d'Arsonval (bipolar) current is used because of greater ease of control with respect to insulation, and the more effective cauterization it conveys.

A footswitch is used to turn on the current, when it is seen that the blade is properly applied against the constricting ring; and while the current is active

Fig. 2.—Ureteral knife.

the blade may be slowly drawn toward the operator, or back and forth, as desired.

Pain is avoided by the use of one or two tablets of cocain through the urethral tablet depositor. Bleeding seldom accompanies, but if it does occur in connection with an inflamed prostatic urethra, the blood may be swept out of view by opening the irrigating cock of the cystoscope sheath.

The after-effects are so little in evidence that the cases are ambulatory with the exception, perhaps, of a day or so of quietude to avoid infection.

Internal antiseptics (helmitol) are advisable coincidently.

As an illustration of the efficiency and at the same time the innocuousness of this method, the following notes are given in brief:

CASE 1.—D. R., a farmer of Oswego, Kan., aged 64, was referred to Dr. E. E. Liggett. Fifteen years before, the patient had been hurt while riding horseback and had suffered from prostatitis and retention of urine. Six years later, he had had retention. Aug. 26, 1916, after an auto ride on a cold day, he had suffered from retention and had been catheterized every eight hours for several days. August 31, he consulted surgeons of another city, where, on account of the seriousness of the situation, continuous drainage through a catheter suprapubically was established. He was then sent home to be advised later as to when prostatectomy should be carried out. Dissatisfied with this arrangement, he consulted me in October. His condition was then bad. He was unable to pass any urine save through a catheter or the suprapubic drainage tube, and infection of the suprapubic opening was making itself manifest. The urine was of low specific gravity, indicating that the kidneys were beginning

Fig. 3 (Case 2).—Shadow in contact with ureteral catheter, simulating ureteral stone (compare with Figure 4).

to participate in the degenerative process. Indeed, he was in no condition for prostatectomy, even if it had been desirable.

Fulguration with the prostatic incisor was first used October 17. The effects were striking. A few days after the first one, he was able to urinate voluntarily and to empty the bladder completely. The fulgurations were supplemented with deep urethral dilatings from time to time.

The patient has reported once or twice since, being in fine condition, with free urination and complete emptying of the bladder.

Several other instances of equally satisfactory results might be cited, but are omitted for lack of space.

URETERAL KNIFE

For a number of years, since about 1904, I have made use of ureteral scissors in connection with the operating cystoscope, for the purpose of opening a constricted ureter, or enlarging its orifice. In most such cases, they have given good service, but in some it was found that the lip of the orifice would slip

* Read before the Section on Genito-Urinary Diseases at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

away from the closing blades of the scissors and an incomplete effect was the result.

The accompanying ureteral knife (Fig. 2), acting from behind forward, is intended to overcome this uncertainty. The blade is sunk and out of play while being introduced or until it is brought into play by turning the thumbscrew on the handle. The amount of divergence of the blade may be gaged and controlled by observing the number of turns of the screw and the direction of the blade as indicated by the little knob on the handle. It is obvious that the blade should be directed toward the superior lip of the orifice, so that the cutting will be toward the cavity of the bladder.

USE OF URETERAL FORCEPS FOR DIFFERENTIATION OF PHLEBOLITH FROM URETERAL STONE

Case 2.—Mrs. S., aged 42, was referred by Dr. Boynton of Sparta, Ill. She gave a history of intense suffering in the right renal region and also of intermittent colics on the left side, apparently low down in the ureter. A roentgenogram

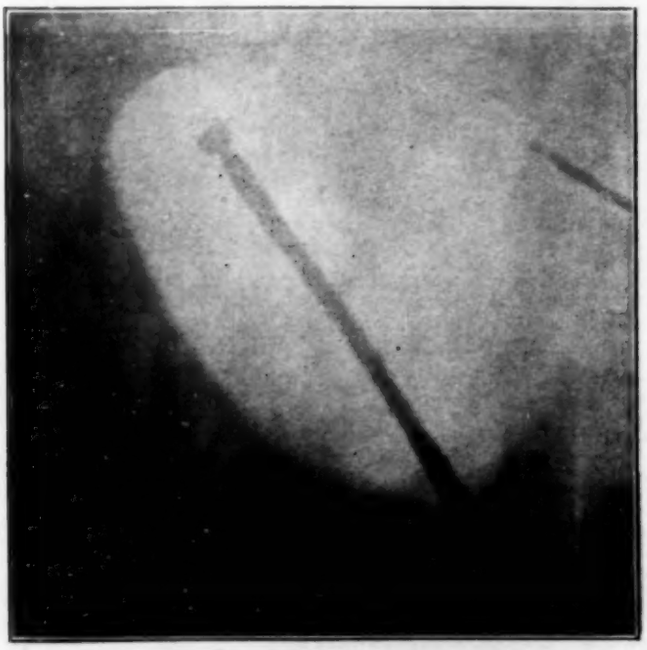

Fig. 4 (Case 2).—Ureteral forceps 3 inches up the ureter, removing the ureter from the shadow of a phlebolith previously in contact with a ureteral catheter (compare with Figure 3).

(Fig. 3) taken with a catheter in the ureter showed a shadow apparently in immediate contact with the catheter.

While the shape of the shadow did not conform to that typically characteristic of stone, it was not such as to make a definite denial of stone, and its apparent apposition to the catheter gave strong evidence presumptive of a stone, especially when taken in connection with the symptoms given. But this evidence was shown to be erroneous when ureteral forceps were introduced into the same ureter and another roentgenogram was taken (Fig. 4). The forceps, being more rigid than the catheter, straightened out the ureteral channel, definitely separating it from the shadow by a distance of half an inch. This action indicated that it could not be a stone within the ureter and therefore must be a phlebolith.

It is hoped that this sign may in certain cases prove as useful for differentiation as it proved in this one.

URETERAL DILATOR WITH PARALLEL DILATING BARS

The ureteral dilators previously submitted by me have had an objectionable feature in the fact that the most forcible dilatation was centered at some one point instead of being applied evenly along the ureter for a given distance (Figs. 5 and 6).

The latest model, herewith shown (Fig. 7), overcomes this objection and also gives a more forceful effect than the previous ones.

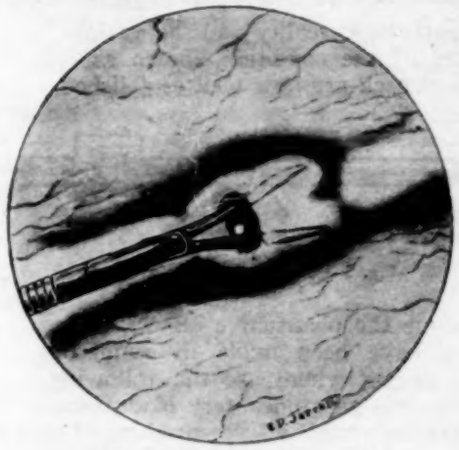

Fig. 5.—Ureteral dilator.

In addition to its use as a dilator, either at the meatus or above, it is conceivable that it might be used for traction on an incarcerated stone, as shown in Figure 8 *D*. I have not had an opportunity of using it in this way.

Since reading this paper, the author has removed an incarcerated stone by the method described above directly from the ureteral caliber, fully 2 inches above the orifice.

ABSTRACT OF DISCUSSION

Dr. William F. Braasch, Rochester, Minn: The instruments which Dr. Lewis demonstrated are a distinct improvement over his previous ones; the rectangular dilator is a great improvement over the Kollmann dilator type. The intraureteral knife ought to be much more practical than the scissors. Although the meatus may be cut with impunity, it is necessary to exercise great care in cutting the ureter itself. But in the upper portion of the ureter, above the distance of 2 c.c., I would be very loath to do much cutting. I have seen several ureters punctured by the introduction of stiff ureteral catheters. I was also much interested in Dr. Lewis' very ingenious method of distinguishing shadows in the para-ureteral area.

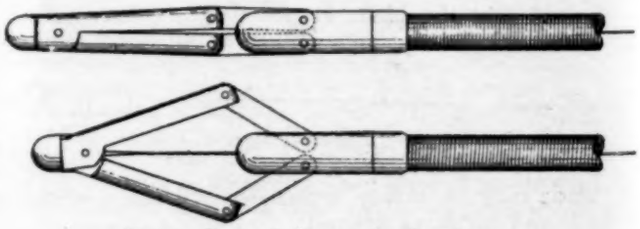

Fig. 6.—Ureteral dilator, closed and open.

I think it is a very valuable point, something well worth trying. The idea of using a stiff instrument which will not bend and will not permit the ureter to bend, or to straighten out the ureter drawing it away from the shadows, is a good point. I think it would be a good thing to follow in making a diagnosis of those troublesome shadows in the lower ureter. The unaided catheter is of comparatively little value in interpreting small shadows; it is as frequently misleading as it is of diagnostic value. I have long ago called attention to this point, and have advocated the use of the ureterogram. I can plainly see that even a stiff instrument or sound can also be misleading under certain conditions. I think that after all is said

and done a final evidence as to the identity of these doubtful stones is the ureterogram. I have never yet seen a ureterogram fail if properly interpreted. I recognize the value of the method that Dr. Lewis has suggested in these particular cases.

DR. H. L. KRETSCHMER, Chicago: A contribution such as Dr. Lewis' is responsible, in part at least, for the fact that the entire treatment of stone in the ureter, for instance, has come back to the urologist, and that we have more cases referred to us for treatment for intravesical manipulation

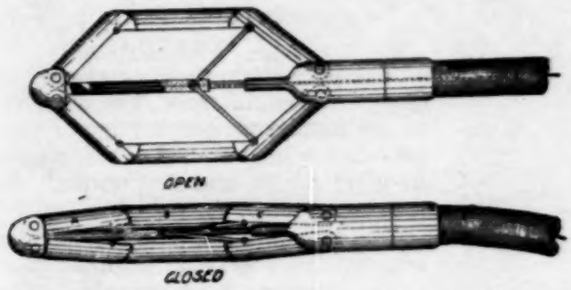

Fig. 7.—Latest model of ureteral dilator, with detail of parts.

instead of having them operated on by the open method. Surely I believe that all of us, if we had a ureteral stone, would want to be operated on by the intravesical rather than by the open operation. Any improvement in the technic or in the instruments is always a step in the right direction. In reference to localizing shadows in the ureter, I think his method is very novel and very good; but it means that Dr. Lewis passed a shadowgraph catheter first, subjecting the patient to a second cystoscopic to accomplish his object. It required a second cystoscopy. Recently we have been doing that in another way. We make a double exposure with one plate. After the shadowgraph catheter has been passed an exposure is made. Then, without changing either the position of the patient or without changing the position of the plate, a

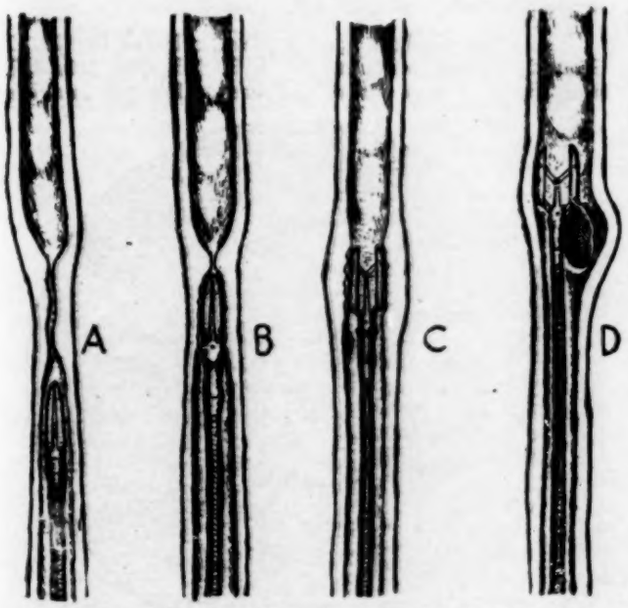

Fig. 8.—Use of dilator: *A*, in strictured ureter; *B*, entering stricture; *C*, dilating stricture; *D*, making traction on a stone in the ureter.

second exposure is made on the same plate by changing the position of the tube. In cases of ureteral stone two shadowgraph catheters are seen and two ureteral calculi, both in exactly the same relationship to the catheter. In cases in which we suspect a stone, but the suspected stone shadow is produced by an extra ureteral shadow-producing body, we then obtain a double exposure, one of which shows a distinct interval between the suspicious shadow and the ureteral catheter. It seems to me in that way we can avoid two cystoscopic examinations.

FAMILIAL MACULAR DEGENERATION WITH AND WITHOUT DEMENTIA

WITH A REPORT OF TWO NEW CASES OF THE TYPE WITH DEMENTIA *

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Since 1897, when R. D. Batten[1] reported two cases in brothers, each of whom showed symmetrical affections in the two eyes consisting of dark spots in the macula and pallor of the optic nerve heads, a small number of cases in families have been reported.

These cases belong in the classification of familial degenerative diseases, among which those affecting the eye are the amaurotic family idiocy of Tay and Sachs; the juvenile type of amaurotic family idiocy of Spielmeyer,[2] Vogt, F. E. Batten[3] and others, and familial macular degeneration with and without dementia.

Between Tay-Sachs' disease on the one hand and macular degeneration without dementia on the other there are, of course, great differences; but analysis of many cases of familial disease seems to show a gradual transition from one to the other. In fact, when one attempts to put together syndromes and to give them definite names, one is at once confronted by numbers of atypical cases that might belong to one of any two groups.

For example, the juvenile type of amaurotic family idiocy seems to merge on the one hand into the infantile type, and on the other into familial macular degeneration with dementia.

Of the form known as familial macular degeneration, we may say that, combined with symmetrical degeneration of the macular region of the two eyes, there is in some cases a cerebral degeneration causing dementia.

Oatman[4] divides this form of degenerative disease into two types: the macular type in which the retina alone is affected, and the maculocerebral type in which both retina and brain are attacked. In this discussion, when the term "macular type" is used, it refers to the type without dementia. The term "maculocerebral type" is used to convey the idea of the disease combined with dementia. In the macular type we have simply an affection of the eyes and no cerebral symptoms whatever. This begins during the period of puberty, between the ages of 12 and 14 years, though Stargardt[5] reports one case beginning as early as the eighth year. This is in marked distinction to the maculocerebral type, the form with dementia, which begins between the fifth and seventh years, the period of second dentition.

The condition in the two eyes is symmetrical, and the objective and subjective symptoms develop very gradually, though we find exceptions to this rule in Lutz[6] and Sterling.[7] The first symptom is diminution of central vision of both eyes and central scotoma for

* Read before the Section on Ophthalmology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

1. Batten, R. D.: Tr. Ophth. Soc. U. Kingdom, 1897, **17**, 48.
2. Spielmeyer: Neurol. Centralbl., **225**, 51.
3. Batten, F. E.: Quart. Jour. Med., 1913, **14**, 444.
4. Oatman, E. L.: Am. Jour. Med. Sc., 1911, **142**, 221.
5. Stargardt: Arch. f. Ophth., 1909, **71**, 534; Ztschr. f. Augenh., **30**, 95.
6. Lutz: Klin. Monatsbl. f. Augenh., 1911, **49**, 699.
7. Sterling: Neurol. Centralbl., **225**, 55.

red and green, which goes on gradually until, after some years, there may be complete loss of central vision. The periphery of the field of vision is unaffected and shows normal boundaries. Because of disease of the macular region while the periphery of the retina remains fairly normal, the patient develops, first, excentric fixation, and finally, nystagmus.

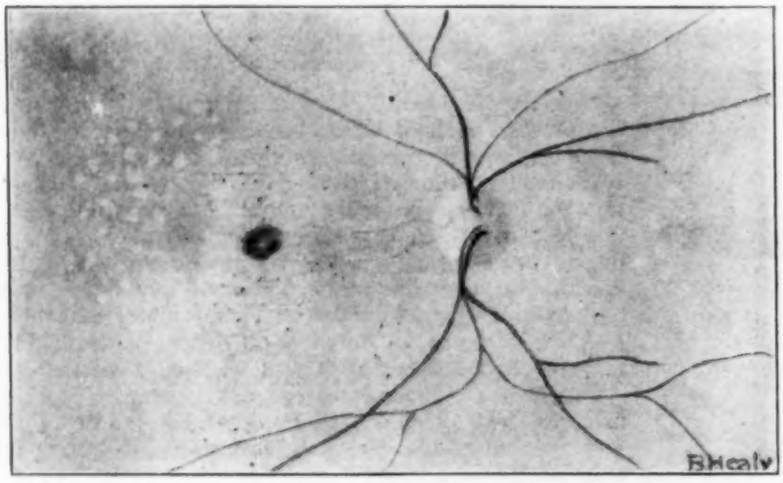

Fig. 1 (Case 1).—Right fundus, April, 1918. Left fundus practically the same. No optic nerve atrophy; vessels narrowed.

Ophthalmoscopically we find atrophy and degeneration of the retina almost always confined to the macular region, somewhat resembling the conditions produced by a senile macula. At first, the macular region shows delicate yellowish gray spots apparently not raised above the level of the surrounding fundus. These spots gradually coalesce and we have a dirty grayish yellow spot about the macula with a diameter equal to that of one or two disks. Covering the spot is a sprinkling of fine pigment granules. For a short distance around the grayish yellow spot the fundus may be dotted with a fine pigment, resembling black pepper. The retinal vessels are normal in the macular type. As to the general condition, we find in the macular type that there are no mental symptoms nor, in fact, any symptoms at all excepting failure of vision, excentric fixation and nystagmus. The general health is good in all reported cases.

This type is much more common than is the type combined with dementia. I was able to find reports of thirty-seven cases of the macular type and ten undoubted cases of the maculocerebral type. Of the latter, four additional cases have been reported which, however, we should class as atypical, because of some variations in history and symptoms.

The maculocerebral type, that is, the type which is characterized by the addition of cerebral symptoms, or dementia, to the eye symptoms already described, is distinguished from the macular type by the fact that the onset occurs at about the time of second dentition, instead of at puberty, and that cerebral changes begin at the same time as those in the macula. There is a gradual loss of intelligence leading to dementia. Ophthalmoscopically the changes are identical, except that optic nerve atrophy is more common in the type combined with dementia. The general health in practically all cases of both types reported has been remarkably good, and the patients have been well nourished, free from constitutional diseases and paralyses, and of good family history.

In addition to the cases that may be definitely designated as of the macular type and of maculocerebral type, we have some cases reported which, while conforming in many details to the accepted syndrome of the disease, present variations that prompt us to classify them as irregular cases. As examples, we have Stock's[8] three cases and Hirschberg's[9] one case.

REPORT OF TWO NEW CASES OF FAMILIAL MACULAR DEGENERATION WITH DEMENTIA

The patients in these cases are two of a family of five children. The other children of the family, one brother aged 7 years and two sisters aged 11 and 4, respectively, are in good health and are normal in every particular.

The two children who are affected present typical cases of the malculocerebral form, showing distinct cerebral symptoms as previously reported by F. E. Batten[10] and Oatman,[4] Nettleship,[11] and others.

The parents are persons of ordinary intelligence and in good health. There is no history of consanguinity, hereditary diseases, or mental diseases known in any branch of the family. There is no Jewish blood. The eyes of the parents are normal. There is no history of eye trouble in the grandparents or in the brothers or sisters of the parents or their descendants. The parents are farmers and give no history of venereal disease, and in both the Wassermann test was negative. In brief, there is absolutely nothing in the family history that has a bearing on this condition.

Case 1.—R. L., boy, aged 9 years, referred by Dr. C. L. Scofield, Benson, Minn., to Dr. J. P. Sedgwick, July 3, 1916, complained of poor vision and was of lowered intelligence.

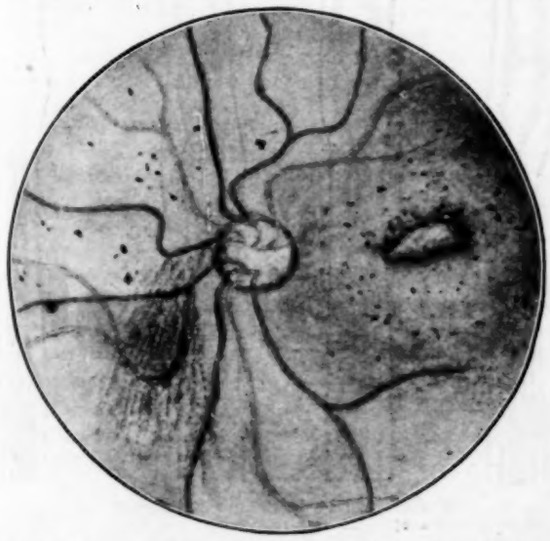

Fig. 2 (Case 2).—Left fundus, June, 1916. The retinal vessels, two years later, have almost disappeared, reaching only slightly beyond the disk margin, and the optic nerve has become atrophic.

He was well nourished and strong, and showed no paralyses. In earlier years he had been a normal child, as far as was known, with apparently normal vision. He had played about as other children, had started school when about 6 years of age,

8. Stock: Klin. Monatsbl. f. Augenh., **46**, 1, 225.
9. Hirschberg, J.: Centralbl. f. Augenh., January, 1904, p.12.
10. Batten, F. E.: Tr. Ophth. Soc. U. Kingdom, 1903, **23**, 386.
11. Nettleship: Tr. Ophth. Soc. U. Kingdom, 1909, **29**.

and had learned the alphabet. At this time he had no difficulty with vision and was said to be mentally as alert as other children. Previous diseases were mild measles and whooping cough. After he had passed the age of 7 years, his vision began to fail and the parents noticed that he looked sidewise in order to see.

At the same time he had suffered a gradual loss of mental alertness, which had made him unable to continue in school. These symptoms had become gradually more marked until at the age of 9, he was quite dull mentally and had no central vision. He could see large objects with the periphery of the retina by turning the head—eccentric fixation. Horizontal ocular nystagmus was present to a moderate extent. Examination of the visual fields was found impossible because of the patient's limited intelligence, poor vision and nystagmus. The Wassermann reaction was negative, as was also the roentgenogram of the skull. The urine and the blood were negative. Externally, the eyes were normal, and the cornea and aqueous were clear. The iris was of normal appearance with no evidence of previous inflammation. The pupils were dilated and reacted little, if at all, to light, but did react to accommodation.

The ophthalmoscope showed that mediums were clear and the optic nerve and retinal vessels normal. At the macula was a horizontally oval spot resembling those in some cases of senile macula, about 1 D. in long diameter, of a dirty dark gray yellowish color, and with very fine pigment spots. The spot at the macula was quite distinctly marked off from the adjacent area, but the retina had a grayish cast for about 1 D. surrounding it. The remainder of the fundus was apparently normal. The appearance of the two eyes seemed almost identical. There were no edema, exudates, coarse pigment deposits nor any results of previous inflammation seen in the fundi. In March, 1918, nearly two years later, all conditions were practically unchanged.

CASE 2.—P. L., girl, aged 13 years, a sister of the patient in Case 1, had always had good general health, though she had complained of headache. There were no paralyses. She was very well nourished and the urine, blood and Wassermann reaction were negative. The roentgenogram of the skull was negative. The only previous disease had been measles. Vision had fallen so that she could not go about alone. She had been a bright child and at about 6 years of age, had begun school, where she had learned to read and to write her name. She was about 7 years old and in the second grade when her vision and mind had begun to fail. One year after discontinuing school she had begun to have what her parents called "fits." Mentally, the child was demented until her intelligence was about that of an imbecile. Because of the nystagmus and mental condition, visual fields could not be taken. The pupils were dilated and reacted little, if at all, to light. She had eccentric fixation and the staring appearance of one almost blind.

Externally, the eyes showed no disease. Ophthalmoscopic examination showed clear media and no evidence of previous inflammation. The fundi showed a condition similar to that of the brother's, but seemingly more advanced. The optic nerve was distinctly atrophic and the retinal vessels were small. At the maculae was the same dirty grayish yellow area as seen in the brother's eyes. This area was about 1 D. in its horizontal diameter. Around this macular area, for a width of about 1½ D., the retina had an atrophic appearance, was of slightly lighter color than the rest of the fundus, and looked as though it had been sprinkled with fine black pepper. The fundi of the two eyes were alike, except that one showed in the nasal inferior quadrant some flat, pale, grayish splotches of pigment which were almost transparent, and which were traversed by the retinal vessels without modification.

In March, 1918, the condition was the same, except that considerable pigment deposits appeared in other parts of the fundi than the maculae, and the retinal vessels atrophied so that they extended only a short distance beyond the disk.

The two cases reported in the foregoing are of the type of familial macular degeneration with dementia, eight cases of which were reviewed. The eight do not include Hirschberg's one case or Stock's three, which may be classed as atypical.

Oatman[4] reported the cases of two children in a family of three, which are remarkably like the two new cases that I have just reported. The eldest and the youngest were affected with macular degeneration with dementia, while the intermediate child, aged 10, was normal in all respects.

Summarizing the findings in the cases of macular degeneration with dementia which are so far reported, we are able to form a definite syndrome. It is true that some cases vary in details, but this is true in summarizing the symptoms of any disease. Of this type we find reported five families, consisting of thirty-two persons, ten of whom were affected. In all the cases the two eyes were symmetrically affected.

The age at which patients were examined varies from 8 to 13 years, except in Nettleship's patient, who was 48 years old at the time of examination. The age of onset in the maculocerebral type varies from 5 to 7 years, approximately the period of second dentition. At this time, we have failure of vision and intellect, sometimes accompanied by headache and convulsions, though convulsions may not set in until later in the course of the disease, and have not always been reported present.

As stated before, judging by our knowledge of this condition at the present time, I am inclined to regard macular degeneration with and macular degeneration without dementia as the same disease. Why the onset of one type occurs at the time of the second dentition and is accompanied by cerebral degeneration, while the onset of the purely macular type occurs at puberty, and is not accompanied by cerebral change, remains to be explained.

Of the other type of the disease, that is, macular degeneration without dementia, I find thirty-seven undoubted cases. Stargardt[5] has reported to date ten cases in three families, which is the largest number reported by any observer.

ETIOLOGY

No positive statement of the cause of this disease can be made in the present state of our knowledge. There are no deformities, nor ocular anomalies reported, nor any chronic general disorders with which the disease can be brought into relation.

Syphilis is strikingly absent. Only Mayou,[12] in his family of three cases out of the ten reported cases of the type with dementia, mentions it as a possibility, and he simply states that "doubtful syphilitic history was given by the mother." Batten in three cases and Nettleship in one case ignore this point. Oatman, in his family of two cases, and the family of two new cases that I have reported, give definitely a history of the absence of syphilis.

We thus have four cases of the type with dementia reported with definite absence of syphilis, three in which syphilis is not mentioned and three with doubtful syphilitic history in the mother. Since it is very probable that syphilis would have been mentioned by Batten and Nettleship had it been present in their cases, we may assume that they did not find it. Concerning the incidence of syphilis in the type without dementia, of the thirty-four cases reported twenty-two are definitely nonsyphilitic. In ten cases the point is not mentioned, and in two cases of R. D. Batten

12. Mayou, M. S.: Tr. Ophth. Soc. U. Kingdom, 1904, **24**, 142.

syphilis is mentioned in the parents, but the children showed no signs of hereditary syphilis.

Thus out of forty-four reported cases in both types of the disease, twenty-six are reported definitely non-syphilitic, the point is not mentioned in thirteen cases, and five cases give a doubtful syphilitic history. We should seem justified in excluding syphilis as an etiologic factor until such time as undoubted syphilis is demonstrated in a fair number of cases. At present the evidence is against it.

Against the theory that macular degeneration is congenital stands the fact that, in the type without dementia, vision remains good until the period from the tenth to the thirteenth year or about puberty, while in the type with dementia, the patient is normal until about the time of second dentition, at the age of 6 or 7 years.

In all analyzed cases, except Feingold's[13] three cases, the patients were Gentiles, in marked distinction to the Tay-Sachs type of amaurotic family idiocy, which attacks Jews almost exclusively.

Consanguinity cannot be totally excluded as an etiologic factor, as there was blood relationship in some reported cases, but those in which there was no blood relationship preponderate. As consanguinity has appeared, however, in four out of ten cases of the type with dementia, we must bear it in mind as a possible cause. In the cases of macular degeneration without dementia, it has appeared in only three out of thirty-four cases reported. Stargardt,[5] who in 1913 evidently had not seen the Jennings[14] report of 1909, describing three cases of the macular type in which the patients were children of first cousins, advances the theory that since consanguinity had not, to his knowledge, been reported in the macular type, it might possibly be a factor in determining whether the disease should assume the macular or maculocerebral type. His idea was that where there was consanguinity the form with dementia was more liable to appear than in those cases in which there was no blood relationship.

In the light of analysis of reported cases, I cannot at this time accept this theory, because I have reviewed cases enough of the type with dementia in which consanguinity is precluded to make the theory untenable. Besides, Jennings' three cases of the type without dementia in which there was consanguinity, make it even less probable that blood relation determines what form the disease shall assume.

Among forty-four cases of both types reported, seven cases give a definite history of consanguinity, twenty-two of no consanguinity, and in fourteen the point is not made clear. Thus, it may be seen that until we have an opportunity of analyzing many more carefully reported cases, the question of cansanguinity as an etiologic factor must remain unsettled. At present I may say that, while consanguinity may be a contributing factor, it is not a necessary element of the etiology.

Heredity must also be considered as a cause. Direct heredity, as in congenital cataract, etc., has not been observed. Rather this disease should be classed under collateral heredity, as defined by Bollinger, "when children of the same family suffer from the same disease, no cause for which can be found among parents or grandparents." No cases of the disease have been reported, except among brothers and sisters. We should bear heredity in mind as a possible etiologic factor, though the disease itself has not appeared in succeeding generations.

As to the nature of the disease, we are absolutely in the dark. Stargardt says, "The question of the nature of the inherited *Krankheitanlage* and of the direct cause of the disease process remains completely unsettled." He suggests that in the retinal disease, as also in the cerebral disease, which appears in the type with dementia, we have a certain autocytotoxin that has an affinity for the neuro-epithelium of the retina and, in some cases, for certain brain cells. He further suggests that when this purely hypothetic toxin attacks not only the retina, but also the brain cells, we have the type with dementia. Stock also assumes the presence of a toxin as a cause of his cases, which he reports under the name of *Familiäre amaurotische Demenz.*

Pusey[15] reports a family of five patients affected with the macular type, who showed arteriosclerosis of the terminal branches of the vessels in the macular region. He suggests that this arterial condition may have something to do with the macular disease.

Recorded cases reveal no previous illnesses that help us in regard to etiology. Only the common infectious diseases of childhood are mentioned.

The health and general condition of all patients of both types reported are strikingly good.

CHARACTERISTICS OF THE TWO TYPES

In the type with dementia the loss of vision and intelligence is gradual; no cases are reported in this type in which it has been rapid. The majority of cases have been examined from one to six years after onset, when mental and visual deterioration was well advanced. The vision of one of the patients whose case is reported in this paper was so poor six years after onset that she was practically blind. Two years after onset, her brother could see large objects fairly well. Of Mayou's patients, one examined four years after onset could count fingers. Mental deterioration seems to follow with about the same rapidity as that of vision. We may safely state that from three to six years is sufficient time in the maculocerebral type to change bright children with good vision to patients in a condition approaching amaurotic dementia.

In the type without dementia, in which the retina alone is involved, the loss of vision has been gradual, except in Lutz's[6] four cases and Stirling's[16] three cases, in which it was rapid at first. After the primary deterioration, the vision in this type may remain stationary for years and then fall again, but it does not go on to complete blindness.

In the two cases of the type without dementia in Batten's family, one child had "fits." One of the two patients whose cases I have reported (Patient 2) had convulsions, starting one year from the date of onset of the disease. One of Oatman's patients developed epileptiform seizures two years after the onset of the disease, which continued for a period of four years to the time of his last report, at which time they were less frequent. In the maculocerebral type of the disease, we find that convulsions are reported in four out of ten cases, and that they appeared from one to two years after the onset of the disease. Convulsions do not occur in the macular type of this disease, but only in the maculocerebral type.

13. Feingold, Marcus: Tr. Sect. Ophth. A. M. A., 1916, p. 312.
14. Jennings: Am. Jour. Ophth., St. Louis, 1909, **24**, 296.
15. Pusey: Tr. Am. Ophth. Soc., 1915, **14**, 364.
16. Stirling, A. W.: Ophthalmoscope, London, 1912, **10**, 141.

No paralyses are reported in either type of macular degeneration. The eyes externally appear normal. There are no signs of inflammation and the refractive media are clear. In both types the reported cases showed eccentric fixation. There were also nystagmus and searching movements of the eyes.

The visual acuity depends on the stage of the disease at which the examination is made. It varies from slight deterioration to almost complete blindness, though the latter condition is more common in the maculocerebral type, in which the vision passes through all stages between these two extremes in from three to six years. The periphery of the fields is not contracted, and there is, at first, a central scotoma for red and green, and later an absolute central scotoma.

The macular region has been described in detail. As to the optic nerve, four out of ten cases of the type with dementia are reported as showing optic nerve atrophy, while in two cases there was paleness of the nerve. In the two cases that I have reported, one of the patients showed distinct optic nerve atrophy, while in the other case, the nerves were normal. Optic nerve atrophy is more commonly seen in the maculocerebral type than in the macular type. Outside the macular region, the fundus has been normal in a majority of reported cases, but enough atypical cases have been reported to make mention of these variations necessary. Examples of the latter may be found in Stargardt's[5] family S., which were of the type without dementia. The cases herein presented show some irregular pigmentation in other parts of the fundi.

DIFFERENTIATION

In the differentiation of familial macular degeneration with or without dementia, we have to consider amaurotic family idiocy and retinitis pigmentosa.

There are two types of amaurotic family idiocy: first, the typical cases (Tay-Sachs form) in which the onset occurs in infancy and, second, the so-called atypical cases in which the onset is delayed until childhood and which may be termed juvenile amaurotic idiocy.

Any attempt to construct a definite syndrome and to separate sharply the juvenile type of amaurotic family idiocy from maculocerebral degeneration lands the investigator in a wilderness of atypical cases, which is most disconcerting. The more cases he analyzes, the more is he convinced that the two types merge into one another in the same manner that the infantile and juvenile types of amaurotic family idiocy seem to merge. For example, Spielmeyer's[2] cases of juvenile type resembled maculocerebral degeneration with dementia in the matter of age of onset, course, mental and visual symptoms, and absence of paralyses.

Vogt's cases showed yet another juvenile type of amaurotic family idiocy, in which paralyses were present with loss of vision, which condition seems to link them, on the other hand, to the infantile type. The onset of Vogt's cases covered a period of from six to fourteen years; loss of vision led to complete blindness, and the paralyses to complete helplessness.

In discussing the cases of the juvenile type described by Spielmeyer and also those of Vogt, Jendrassik[17] says, "From the description, it is apparent that the two types stand in close relation and can hardly be classed as separate diseases. They are only members of the great family of heredodegenerations." He explains the intensity and rapidity with which the infantile type develops as depending on a lack of resistance due to the extreme youth of the patients.

I may briefly state that in differentiating the types of degenerations to which any particular cases may belong, one must consider the syndrome presented and then place the cases as nearly as possible where they belong after a thorough analysis of reported cases, bearing in mind the large percentage of atypical cases.

17. Jendrassik: Handbuch der Neurol., **2**, Spez. Neur., **1**, 420.

PATHOLOGY AND TREATMENT

Unfortunately, little is known of the pathologic conditions of macular degeneration with dementia. Stock's[6] report, while of atypical cases, should be mentioned. He holds that the process of the primary disease, so far as the eye is concerned, is destruction of rods and cones, and finally, gradual destruction of the neuro-epithelium and of the outer nuclear layer.

The subject of the treatment of this disease may be dismissed with the statement that, to date, there is no known remedy for the condition.

CONCLUSIONS

We have a large class of cases showing a great variety of motor, sensory and mental symptoms, which may be called heredodegenerations.

Those in which we are particularly interested as affecting the eyes, are retinitis pigmentosa, infantile amaurotic family idiocy, juvenile amaurotic family idiocy, and maculocerebral degeneration.

While what have come to be known as typical cases of these conditions are easily distinguishable one from another, there are many atypical cases which are transitional forms and might be in one of any two classes.

The cause of these degenerations is unknown. If there is a common cause, we are totally in the dark as to why the disease assumes one form at one time and a different one at another.

Pathologically in amaurotic family idiocy, the ganglion cells of the retina and central nervous system are attacked. From our slight present knowledge, I think that the retinal condition in maculocerebral degeneration is due to degeneration of the neuro-epithelium.

The relationship, if any, among these different types of degenerative disease must be cleared by a study of atypical cases.[18]

ABSTRACT OF DISCUSSION

DR. PARK LEWIS, Buffalo: Two points are suggested in Dr. Clark's analysis of cases which apply equally to familial idiocy. The first is the fact that they are familial conditions, which would suggest heredity. But obviously they cannot be inherited conditions, because the children become degenerates before they reach the period in which they can propagate their kind. Perhaps, according to the mendelian system, this is what would be termed a unit character, and therein lies the possible explanation of the family relationship. The second point is that both these conditions occurred at critical periods in the life of the child, the first at the period of second dentition and the second at the period of adolescence. This fact suggests a relationship with other organic changes that are occurring at that time. The pineal gland and the thymus cease to function at this time. The ovaries, the testes and the pituitary begin to activate. Dr. Timme brought to my attention a most important fact connected with the glands of internal secretion. He has shown that the conditions which

18. In addition to the references already given, the following will prove of interest:
Batten, F. E., and Mayou, M. S.: Ophth. Rev., London, 1915, **34**, 91.
Doyne: Tr. Ophth. Soc. U. Kingdom, 1899, 71.
Darier, A.: Clin. ophth., January, 1914, **20**, 3.
Doyne: Tr. Ophth. Soc. U. Kingdom, 1909, p. 12.
Coriat: Arch. Pediat., **30**, 404.
Harbitz: Arch. f. Augenh., 1913, **73**, 140.
Wolfsohn, J. M.: Amaurotic Idiocy, Arch. Int. Med., August, 1915, p. 257.

are perpetuated are not necessarily the individual conditions which appear in the child, but are due to a disparity in the relationship of the endocrine glands. That would be quite in accordance with the mendelian law.

These people do not inherit a distinct unit character, but, in all probability, a tendency toward an imbalance in the endocrine system. That would explain how apparently normal parents can have children showing these degenerative characteristics. And it is not unlikely that if the family tree were followed we would find not only atrophies and neural degeneracies, but other conditions of which this neural degeneracy is simply one manifestation. The crux of the whole problem lies in the fact that optic atrophy is a common condition and that it is not infrequently associated with low mentality.

Dr. Harold Gifford, Omaha: These cases are not interesting until you have seen one or two of them. I have seen two of the Vogt type, which begin to show signs of defective vision and mentality at the age of the first dentition. In the Stargardt-Batten type, to which Dr. Clark refers, the patients develop macular degeneration at puberty, but not cerebral degeneration. In my experience those cases are the most common. Dr. Clark is right in laying down the proposition that it is impossible to draw a dividing line between the groups, and that the chances are that they all represent a series in which there is something defective in the nervous system. Or you may explain it by the exhaustion theory of Edinger, or it may be attributed to a defective "anlage." We do not know the reason why it is, but the fact remains that the retinal cells and the cerebral cells tend to degenerate at an early age. This Stargardt-Batten type is the one we must look for. These children live to the age of puberty, are perfectly normal, and then their vision begins to fade, and if you examine their retinas at this time you will find a little dusky pigmentation in the center of the macula. It looks as if there was a little soot spread over it and partly wiped off. This pigment then accumulates in larger clumps and you see little areas of whitish degeneration mixed with it. It extends out, perhaps, two disk breadths in diameter and then stops. The periphery remains normal, and they retain good mentality. Recently I saw cases with everything typical in the family, except that instead of beginning at the age of puberty, I am quite certain that their trouble began along about seven or eight years of age. In other words, the action of the sexual cells has nothing to do with it, and the fact that the Vogt type, which usually begins at the beginning of the second dentition, is also coincident with the time when the children have to use their eyes and their minds actively, may indicate that this is a mere coincidence. The child may be slightly defective, and it passes entirely unnoticed until the child goes to school, when it is found out that there is something wrong. This particular type goes on to idiocy or dementia and epileptiform convulsions, paralyses, etc.

To show how these types run into one another: A family is reported by Higien, in which one child had the typical Tay-Sachs degeneration, beginning in infancy, the child dying in a few years. The second child had the Vogt type, beginning with the second dentition and going on in the usual way; and the third had the Stargardt-Batten type. Dr. Brown Pusey has suggested that this Stargardt-Batten type of macular degeneration is nothing more or less than a familial tendency to arteriosclerosis of the central portion of the retina. I think that theory is worthy of consideration.

Dr. E. J. Bernstein, Detroit: I have had only one case of the Tay-Sachs type of amaurotic family idiocy. Looking up the etiology, I find that many men lay stress on consanguinity as a cause. That is simply a confession of ignorance. I cannot understand, in the face of the great number of married people who are related and who have perfectly healthy progeny, why consanguinity should be assigned as a cause of disease in the small number of cases in which some stigmata develop.

Amaurotic family idiocy usually occurs among Jewish children; marriage between relatives is very common among Jews, but no one accuses the Jews of degeneracy, as a rule. Very few of these cases usually occur among the Russian Jews. It seems to me that this form of degeneracy is due to the economic conditions under which the parents have lived for so many years and not to consanguinity.

PERICHOLECYSTITIC ADHESIONS

THEIR IMPORTANCE AND CLINICAL RECOGNITION *

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Experimentally by Rosenow,[1] pathologically by MacCarty[2] and clinically by Fowler,[3] Cheney[4] and myself,[5] it has been satisfactorily demonstrated that affections of the gallbladder commonly represent progressing infection of the structures forming the gallbladder wall. The infecting bacteria are usually blood-borne. In a large degree, abnormal contents of the gallbladder are the by-products resulting from bacterially induced inflammation involving any or all of the four layers of tissue comprising the wall of the viscus.

In origin, pericholecystitic adhesions may be intrinsic, that is, occurring as a consequence of changes primary in the gallbladder, or extrinsic, that is, secondary involvement of the gallbladder, due to disease in neighboring structures.

The term "pericholecystitic adhesions" commonly signifies the complications resulting from inflammatory processes arising in the gallbladder wall and involving the serous layer. The extrinsic origin of gallbladder adhesions is comparatively infrequent. Such lesions include primary and secondary malignancy involving the gallbladder, contiguous invasion of gallbladder structure from disease in adjacent viscera (most commonly, ulcerative processes of the duodenum, stomach, bile ducts or colon), or inflammatory or malignant disease originating in the peritoneum.

The newer laboratory and clinical studies have clearly proved that since gallbladder disease is commonly initiated by bacterial growth, the manifestations of the inflammatory reaction on the part of the gallbladder wall may be continuous and progressive (acutely or chronically) or intermittent at variously separated intervals. Pathologically, two facts are consequently emphasized: First, very extensive pericholecystitic adhesions may arise within a short time, should there be actively progressive bacterial invasion, or similar lesions may represent years of disease, should the infecting organisms be of low virulence, the tissue defense strong or the extension of infection intermittent. Second, the clinical or histopathologic study of pericholecystitic adhesions furnishes no clue as to the time duration of the existing evidences of inflammatory tissue reaction. These facts are further commented on later.

MATERIAL STUDIED

The cases furnishing the basis of this report have been studied during the past eight years. On account of space, this paper must be limited to a consideration of pericholecystitic adhesions arising from disease intrinsic in the gallbladder. It may, however, be mentioned here that of 556 operatively demonstrated instances of benign gastric ulcer, gallbladder adhesions

* Read before the Section on Gastro-Enterology and Proctology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918

1. Rosenow, E. C.: Bacteriology of Cholecystitis and Its Production by Injection of Streptococci, The Journal A. M. A., Nov. 21, 1914, p. 1835.
2. MacCarty: Ann. Surg., May, 1910, p. 651.
3. Fowler, R. S.: Am. Jour. Med. Sc., 1917, **153**, 497.
4. Cheney, W. F.: Am. Jour. Med. Sc., 1917, **153**, 477.
5. Smithies, Frank: Surgical Clinics of Chicago, June, 1918, p. 505.

were noted in 41, or 7.3 per cent.; of 1,291 cases of duodenal ulcer similarly studied, pericholecystitic adhesions were present in 149, or 11.5 per cent., and of 947 cases of gastric cancer proved operatively or at necropsy, the gallbladder was invaded in 51, or 5.4 per cent. It is thus apparent that lesions extrinsic to the gallbladder may be complicated by pericholecystitic adhesions quite frequently enough to render such complication important from the standpoint of diagnosis, prognosis and therapy.

PERICHOLECYSTITIC ADHESIONS IN DISEASE ARISING PRIMARILY IN THE GALLBLADDER

A year ago I placed on record[5] the pathologic and clinical manifestations of 1,000 surgically demonstrated instances of gallbladder disease. This material has been restudied with respect to pericholecystic adhesions. The facts resulting from this study are now presented.

Frequency.—Including twenty-one cases of primary malignancy of the gallbladder, there were pericholecystitic adhesions in 489 (48.9 per cent.) of the 1,000 cases of intrinsic gallbladder disease. In sixty-five cases of the adherent gallbladders the viscus was universally adherent, buried in dense adhesions, or the structures involved by adhesions were not definitely determined. This group of cases has been excluded from the study and analysis made of the remaining 424 cases in which adhesions extended from the gallbladder to neighboring tissues.

Viscera Involved by Pericholecystitic Adhesions.—Table 1 demonstrates how extensive may be the scope of such adhesions and furnishes significant information respecting the degree to which pericholecystitic adhesions may modify the clinical pictures of disease either of the gallbladder itself or of abdominal viscera, particularly such as are concerned with digestion and

TABLE 1.—PERICHOLECYSTITIC ADHESIONS; TOTAL GALLBLADDERS ADHERENT IN 1,000 CASES OF GALLBLADDER DISEASE (INCLUDING MALIGNANT—21)

	No. of Times		Percentage
To adjacent structures	489	or	48.9
Adhesions universal and not specified	65	or	6.5
Structures involved by adhesions in	424	or	42.4

FREQUENCY OF INVOLVEMENT OF ADJACENT STRUCTURES

Structure		No. of Times		Percentage
Cystic duct		104	or	24.5
Duodenum	96	97	or	22.8
Ampulla of Vater	1			
Stomach: pylorus	38	44	or	10.4
Stomach: other part of	6			
Omentum		43	or	10.1
Colon—Hepatic flexure	35	38	or	8.9
Colon—Transverse	3			
Liver		30	or	7.7
Common duct		23	or	5.4
Pancreas		8	or	1.9
Hepatic duct		6	or	1.4
Anterior abdominal wall		6	or	1.4
Appendix and cecum		3	or	0.7
Ovarian cyst		1	or	0.24

assimilation. Attention is called to the facts that, in nearly one of three cases of gallbladder disease, adhesions involve the bile ducts (cystic duct 24.5 per cent., common duct 5.4 per cent. and hepatic duct 1.4 per cent.); that in nearly one of four cases, pericholecystitic adhesions reach the duodenum, causing some anomaly in contour, position or function, and that in more than one of ten cases the gallbladder adhesions are attached to the stomach, commonly at or near the pylorus. Adhesions to the omentum, the colon and the liver are frequent enough to merit serious consideration, if from no other standpoint than that of prognosis, when it is recalled that such adhesions are not rarely infected and represent bridges of inflamed serosa by which bacteria may be transplanted to viscera far removed from the initial bacterial focus. That such conception is not unimportant is emphasized by noting that in this series, pericholecystitic adhesions involved the pancreas eight times, the appendix or cecum three times, and a cystic ovary once.

Frequency of Pericholecystitic Adhesions Simultaneously Involving Two or More Structures.—Table 2 indicates that in eighty-four cases, or 19.5 per cent.,

TABLE 2.—FREQUENCY OF PERICHOLECYSTITIC ADHESIONS SIMULTANEOUSLY INVOLVING VARIOUS STRUCTURES

Duodenum and cystic duct	13
Ulcer, duodenum or pyloric	11
Duodenum and colon	9
Duodenum and pylorus	9
Duodenum and liver	7
Duodenum and omentum	6
Duodenum, pylorus and cystic duct	6
Cystic duct and colon	5
Cystic and common ducts	4
Pylorus, duodenum, liver and colon	4
Omentum and colon	2
Duodenum, colon and liver	2
Liver and stomach	2
Cystic and hepatic ducts	2
Cystic duct and anterior abdominal wall	2
Multiple structures involved in	84
Or 19.5 per cent.	
Stone cases adherent	165 or 38.9 per cent.
Nonstone cases adherent	259 or 61.1 per cent.

in which the gallbladder was adherent, multiple visceral attachments were present. It will be observed that the duodenum, the pylorus, the colon and the bile ducts were most frequently the locations of such multiple adhesions. The occurrence of eleven cases of duodenal or pyloric peptic ulcer (13.3 per cent.) in connection with multiple pericholecystitic adhesions gives significant hints relative to the clinical problems in such cases.

Gallbladder Contents.—In the cases in which pericholecystitic adhesions were demonstrated, the viscus contained calculi in 165 instances (38.9 per cent.). In 259 cases, or 61.1 per cent., no calculi were present. It would thus seem apparent that gallbladders free from stones are adherent to neighboring structures nearly twice as frequently as are those in which stones are found. A biopathologic explanation of this fact is evidently possible. It is quite likely that when adhesions form rapidly and extensively, there exists active, progressive infection which causes exuberant inflammatory reaction in the serous coat of the gallbladder or the lymph channels, before great damage is done to the gallbladder mucosa with consequent marked alteration in the gallbladder content or interference with the free emptying of the viscus.

The foregoing facts also emphasize the fact that in the absence of the commonly considered clinical history of gallstones, one is not justified in assuming that the gallbladder is not seriously at fault. It is quite apparent that not only may the gallbladder function be seriously interfered with, but that the viscus may be the abdominal focus of infection from which bacteria may be widely disseminated. Moreover, the presence and extension of such pericholecystitic adhesions may interfere with the proper working of the digestive apparatus more than would the existence of calculi in the gallbladder.

Pathologic Effects of Pericholecystitic Adhesions.—There were eighteen instances of perforation of the gallbladder with extensive pericholecystitic infected adhesions, in seven of which stones lay imbedded.

There were five instances of acute perforation in which the gallbladder was surrounded by extensive, recent adhesions and pus. In one case, a pericholecystitic abscess appeared to originate from an adjacent, enlarged and infected lymph node. In seven cases, adhesions from the gallbladder to the duodenal or pyloric ulcer cemented the viscera together and was the site of protected perforation with resultant deformity and malposition of the parts. There were four instances of fistula between the gallbladder and the duodenum or stomach (duodenum three, and pylorus one). Two cases of fistula between the gallbladder and the hepatic portion of the colon were observed. A gallbladder appendix fistula was noted once. In another case, a stone had worked its way from an adherent gallbladder into the head of the pancreas.

Most commonly, the gross effects of pericholecystitic adhesions was to interfere with the free emptying of the viscus. This was particularly frequent in that great group of adhesions involving the cystic or the common duct (29.9 per cent.). In such cases, the gallbladder was often so tightly bound down that sharp angulation of the ducts resulted and enormous dilatation of the viscus followed. Not rarely the gallbladder contents measured more than a liter. The ducts themselves, proximal to the adhesions, were frequently dilated almost to the diameter of one's thumb. Such embarrassment to the free emptying of the gallbladder repeatedly accounted for the major clinical symptoms and signs pointing to gallbladder malfunction. Separation of such pericholecystitic adhesions not uncommonly permitted the free emptying of the gallbladder and the subsidence of signs of obstructed bile flow. In nine cases in which the bile ducts were involved by stenosing adhesions, enlargement of the liver of a cirrhosis-like type was recorded.

Pericholecystitic adhesions to the duodenum were sufficiently pronounced to cause malformation, some degree of stenosis, fixation, or faulty position in 43, or 44.3 per cent., of the ninety-seven instances in which such adhesions included that portion of the intestine. The adhesions were commonly attached to the second and third portions of the duodenum. In only nineteen cases was the first portion of the duodenum extensively involved. This fact is significant diagnostically when it is recalled that the first portion of the duodenum is the common location of peptic ulcer. Only once did pericholecystitic adhesion extend distally as far as the papilla of Vater. There were seven instances in which strong adhesive bands resulted in sharp constriction and angulation of the duodenum and in which, proximal to such constricting bands, the intestine was greatly dilated and exhibited intense vascular engorgement.

Malposition of the duodenum was sometimes extreme, the viscus often being drawn up beneath the liver and firmly fixed there. In ten cases of this type there was cicatricial stenosis of the intestine.

Pericholecystitic adhesions involving the pylorus or other parts of the stomach caused obstruction to free gastric emptying in twenty-three, or 54.5 per cent., of the forty-four cases in which such adhesions existed. In thirteen cases there was definite pyloric stenosis, seven of these being due to malignant adhesions. Deformity of pyloric contour was present in twenty-nine cases. Abnormal position of the pylorus, generally partial or complete fixation to the right of the midline (even direct attachment to the liver), was observed in twelve cases where pericholecystitic adhesions involved the stomach.

Gross deformity of the colon was recorded in nine (26 per cent.) of the thirty-eight cases where adhesions reached the colon. Three of these cases were malignant. In the remaining six cases the colon was pulled up beneath the liver, tied to the gallbladder, the duodenum or the anterior abdominal wall. There were two instances in which strong nonmalignant adhesions between the gallbladder and the hepatic flexure of the colon caused sufficient obstruction to lead to the laparotomy at which gallbladder disease was demonstrated to be responsible for the colon stenosis.

CLINICAL MANIFESTATION OF PERICHOLECYSTITIC ADHESIONS

It should be stated here that in eighteen cases, or 4.2 per cent., there were no prelaparotomy symptoms or signs pointing to abnormality of the gallbladder or the digestive apparatus. The operative procedure was instituted for the relief of other disorders and at the abdominal exploration, the gallbladder pathology was demonstrated.

Of the remaining 406 cases, malignancy was present in twenty-one, and although such malignant disease was not always suspected to involve the gall tract, before laparotomy, neoplasms were considered probable in the clinical diagnosis. There thus remain 385 cases of pericholecystitic adhesions in which clinically the preoperative departures from normal were sufficiently pronounced to warrant exploration of the right upper abdominal quadrant. These clinical symptoms and signs can be considered only very briefly.

Symptoms.—It is quite impossible to differentiate dyspeptic disturbances due to gallbladder disease without pericholecystitic adhesions from such disease complicated by adhesions, unless there is clinical evidence of gross abnormality in function in adjacent viscera coexistent with the gallbladder upset. Such abnormal function is commonly of a mechanical type, as for example, when there is stenosis of ducts, the stomach, duodenum or colon, is in the nature of such acute right upper abdominal crisis as occurs in gallbladder or ulcer perforation with abscess. In cases with clinical courses of this form, in the absence of proof of the existence of primary disease in the stomach, duodenum or colon and in the presence of dyspepsia of the gallbladder type, one may suspect that symptoms and signs that experience has proved to be unusual in ordinary uncomplicated gallbladder ailments are produced by pericholecystic adhesions. Special examinations and laparotomy may eventually substantiate this suspicion.

1. Pain. Apart from the pain due to ulcer or malignancy involving the stomach or duodenum, when there exists coincident gallbladder disease, two main sources of pain due to the gallbladder disturbance are possible: first, pain due to the passage of calculi and that due to adhesions interfering with free emptying of the gallbladder. In both types of lesion "colics" may be severe. They were present in rather more than 60 per cent. of our stone cases and nearly 55 per cent. of the nonstone cases, in which pericholecystitic adhesions interfered with free emptying of the gallbladder and ducts. It is thus evident that there is little in the clinical history of pain that permits segregation of the gallstone cases from those in which gallbladders are the origin of adhesions to neighboring structures.

When colicky attacks of pain are not recorded, the manifestations of right upper quadrant may be exceedingly indefinite. A sensation of distention, fulness, up-pressure, or crowding may be annoying. The distress is commonly most pronounced soon after taking food or during the night. The former distress appears to arise as a consequence of an embarrassed gallbladder attempting to empty its contents when food begins to leave the stomach. The latter type of discomfort seems to result from the fact that the distended, inflamed gallbladder is irritated by gastric hunger contractions and a fecal or gas-filled hepatic colon crowding up into the gallbladder zone. At times a sensation of pulling, sticking or dragging leads to the suspicion that adhesions to adjacent viscera may be present.

2. Bowels. Constipation was obstinate in 62.7 per cent. of the instances of pericholecystitic adhesions in this series. There was diarrhea in 9.8 per cent. and normal motions in 27.4 per cent. These figures closely approximate those instances of gallbladder disease in which pericholecystitic adhesions did not exist.

3. Nausea was an annoying symptom in eighty-nine cases, or 18.2 per cent., and vomiting in 106 cases, or 21.7 per cent. With respect to these symptoms, there was no appreciable difference between the stone and the nonstone cases, but the frequency is considerably less than in instances of gallbladder disease in general (45.2 per cent.).

4. Signs of Obstructed Bile Flow. Jaundice was constant or intermittent in ninety-two, or 18.8 per cent., of the cases. There was a possible history of jaundice in forty other cases (10.2 per cent.). Except in the cancer cases, constant jaundice appeared to be rather more frequent in the stone cases than in those in which duct obstruction was caused by pericholecystitic adhesions. In the case of malignant gallbladder adhesions, jaundice was persistent in thirteen of the twenty-one cases. Clay colored stools were noted in sixty-one cases, or 12.4 per cent., and bile pigment in the urine in seventy-six cases, or 15.5 per cent.

5. Abdominal tenderness was recorded in 91 per cent. of cases. There was a palpable gallbladder tumor in twenty-nine instances and an enlarged palpable liver in eighteen cases.

6. Gastric Function. Complete test meal analyses are available in 370 cases. The emptying power of the stomach was interfered with in twenty-six cases, or 7.1 per cent. These gastric extracts exhibited persistent twelve hour food retention. In such cases, pericholecystitic adhesions involved the pylorus, the duodenum, the cystic and hepatic ducts, the omentum and the liver. There was gastric retention in seven of the twenty-one malignant gallbladders.

These facts respecting gastric emptying power are of considerable diagnostic significance when considered in relation to such information returned in disease of viscera in the right upper abdominal quadrant other than the gallbladder. In our series of gastric cancer, some degree of twelve hour food retention was proved in 71 per cent., in ulcer of the duodenum in 52 per cent. and in gastric ulcer in 39 per cent. It is evident that even though pericholecystitic adhesions to the duodenum or the stomach may be very extensive, the lumen of the viscera is but infrequently grossly occluded.

7. Gastric Acidity. The average free hydrochloric acid was 35.1, with a range of from 0 to 140. There were forty-five instances of achlorhydria, of which only seven were malignant cases. Total acidity averaged 43.2, with a range of from 4 to 146. Combined acidity averaged 4.7, with a range of from 0 to 19.

It is apparent from the foregoing observations that grossly the gastric secretion does not greatly vary from the normal in this type of case, although there is a rather high proportion of achlorhydrias. There are numerous instances of high free hydrochloric acid—quite as high as occurs in such lesions as duodenitis or ulcer of the duodenum or of the stomach. The test meal analysis may closely approximate that of peptic ulcer, with the exception that blood is uncommonly detected in gastric extracts.

ROENTGEN-RAY EVIDENCE

By roentgenograms, in which nonmalignant pericholecystitic adhesions involve the first part of the duodenum or the pylorus, it is not possible to differentiate the resultant deformity or malposition from anomalies due to chronic ulcer of duodenum or pylorus. In fact, as we have pointed out, peptic ulcer was concomitantly present in eleven of the fifty-seven cases (19.2 per cent.), in which the adhesions involved the pylorus and the common ulcer-bearing area of the duodenum. Thus in nearly one of five cases, a roentgen ulcer picture may modify the possible deformity from pericholecystitic adhesions. Roentgenograms may thus indicate displacement and fixation of the stomach to the right, deformity of the duodenal cap or pylorus, stenosis of the pylorus or duodenum, dilatation of the stomach or duodenum, and angulation of the antrum, the pyloroduodenal junction or of the duodenum itself. Alterations in gastric peristalsis, as a consequence of pericholecystitic adhesions even of a nondeforming or nonstenosing nature are by no means uncommon. The hyperperistalsis with rapid gastric or duodenal emptying or with obstinate pyloric, gastric or duodenal spasm may be quite as pronounced in the case of acute or subacute gallbladder affections with adhesions, as when duodenal or pyloric ulcer is present and associated with them. It may, however, be emphasized again that deformity of the stomach due to pericholecystitic adhesions is most common at the pylorus. Very infrequently the pericholecystitic adhesions reach the gastric antrum or parts of the viscus in which peptic ulcer is common. Similarly, the duodenum was involved by pericholecystitic adhesions in only nineteen out of ninety-seven cases, in its first portion, that is, the most frequent location of duodenal ulcer.

In 211 cases of gallbladder disease complicated by adhesions, of which roentgen study was made, the duodenum showed stenosis in ten, sharp permanent acute angulation of the intestine in seven, dilatation of the first two-thirds in twenty-six, possible deformity in forty-nine and possible malposition or fixation in twenty-three cases. In this group of patients there was gastric retention of the opaque meal in thirteen instances.

When the pylorus or stomach was involved, there was deformity or malposition in eighteen out of thirty-two cases, stenosis in twelve, with three malignant cases, and six hour opaque meal retention in ten cases. Deformity of the pylorus or duodenum was always most pronounced and persistent in the malignant cases or in those in which pericholecystitic adhesions complicated a greatly distended and enlarged gallbladder.

As in the case of roentgen examination of lesions other than pericholecystitic adhesions, it is important to make serial plates, with the patient in different positions, before and after the administration of such antispasmodic medicine as atropin or belladonna. This procedure will prevent local or general spasms of the stomach or duodenum from being considered as definite persistent deformities and will aid in establishing the fact that the deformity or malposition is constant or is localized.

If roentgenograms show enlarged gallbladder, definite gallbladder contour, or stone shadows, then, in the absence of clinical data indicating organic disease of the stomach or duodenum, gross anomalies of these viscera may with a fair degree of safety be interpreted as being due to pericholecystitic adhesions.

Pericholecystitic adhesions involving the colon are neither frequently nor readily demonstrated by roentgenograms. If the clinical history points to gallbladder disease, especially in association with evidences of colon stasis, and if roentgenograms show an enlarged gallbladder shadow or stones, then anomalies of position of the hepatic portion of the colon, if persistent in plate series after the administration of atropin or belladonna, may be interpreted as arising from pericholecystitic adhesions. Such anomalies are more pronounced in instances of malignancy of the gallbladder invading the colon.

Fluoroscopically, deformities of contour or malposition of viscera due to pericholecystitic adhesions are more accurately detected than by plate studies. Not rarely one may definitely prove the absence of primary lesion, such as ulcer or cancer, in the stomach, duodenum or colon, and by palpatory manipulation during the examination (particularly when the study is made in several seances) one may demonstrate that displacements, alterations in contour, angulations, spasms or stenoses are dependent on causes extrinsic to the viscera. Comparison between the observations made before and after the administration of antispasmodic drugs is of such great value that the procedure should be adopted as routine, if mistakes are to be avoided and accuracy in diagnosis sought.

ABSTRACT OF DISCUSSION

Dr. Robert T. Morris, New York: Dr. Smithies referred rather briefly to points which require rather more elaboration. Rosenow has shown that this group of adhesions bears relation to the elective affinity for structures in the vicinity for toxins. This class of adhesions may be grouped under what I have sometimes called "cobwebs in the attic." These cobwebs in the attic do not necessarily accompany an acute inflammatory process. Even a burn at a distance may give rise to adhesions in this vicinity, because toxins are being collected there by elective affinity. After a burn a toxalbumin may be produced, not, perhaps, different in its ultimate effect from the enzyme from an infected tooth root, from the enzyme from bacteria in the tonsil, from enzymes from the colon on their way out. All being grouped in this vicinity by elective affinity produce a second physiologic effect; they call out antibodies, and the antibodies are called out in such an amount that destructive cellular processes result; we then have desquamation of endothelium and plastic exudation, and this forms adhesions, even without the patient being aware of the process at all. There are acute symptoms in some of these cases, in other cases practically none. The symptoms may simulate very closely those of gallstones, and I have seen very many mistakes made by younger surgeons in making a diagnosis of gallstones. Do not make a diagnosis of gallstones; make a diagnosis of cholecystitis. How are we going to prevent recurrence of adhesions after we have separated them, or after we have removed a gallbladder? We must look for the original focus of infection and remove it. Shall we use mechanical means for preventing a recurrence? In cases where adhesions have been very extensive, I believe yes. My first choice is the Senn omental graft; my second choice is Cargile membrane; my third choice is to make an aristol film. The oils are not to be used in this vicinity, because oils catch leukocytes, which are thrown out for purposes of repair, and prevent their organizing and carrying new endothelium over the surface.

Dr. G. A. Friedman, New York: Recent work on the same subject as that of Dr. Smithies' paper and my experience have convinced me of the possibility of diagnosing pericholecystitic adhesions without waiting for exploratory laparotomy. The points are the tender spots or pressure points in the axillary, scapulary and posterior median lines to the right. Tender spots may not be detected in the region of the gallbladder. From the presence of these spots, cholecystitis was diagnosed by my house physicians without the aid of roentgen rays or other examinations. After carefully examining and comparing the spots at the right side with corresponding spots at the left side, and when repeated examinations have convinced you of marked tenderness in the axillary and scapulary lines, you may be sure that operation will reveal, if not gallstones, at any rate, cholecystitis or pericholecystitic adhesions. I do not claim this sign as my discovery. Boas pointed it out years ago, but it was never utilized in the proper way for diagnostic purposes, especially in atypical cases. I have frequently diagnosed cholecystitis in patients who never have had any pain. They presented only the nervous symptoms, such as sensitiveness in the stomach, as the sensation of a load or stone.

I have demonstrated that these pressure points are to the right in the scapulary line, just at the level of the gallbladder, and also near the posterior median lines. Usually the tender spots are found in the axillary line alone; very often, however, in both the axillary and scapulary lines, and occasionally in the axillary, scapulary and posterior median lines. I seldom find these spots in the region of the gallbladder. When repeated pressing on this region fails to disclose tenderness, it is falsely concluded that there is no cholecystitis.

Dr. Nathan Rosewater, Cleveland: May I ask Dr. Friedman how he distinguishes those pains from pains that would occur in rheumatic muscles, or, say, from some other cause?

Dr. Friedman: I have never found the aforesaid pressure points in muscular rheumatism or in the neuralgias, unless it is an intercostal neuralgia, and then the diagnosis is usually obvious. I had three cases of hepatic syphilis in which they were absent; in carcinoma of the pancreas with enlargement of the liver, and in secondary carcinoma they are absent; they are absent in all conditions except in cholecystitis.

Dr. Mary Dunning Ross, New York: I wish that some one would tell us a little more in detail how to get in back of these bacteria before the enzymes and the antibodies have done their damage.

Dr. William Van Valzah Hayes, New York: The cases that interest me particularly are those with adhesions or bands running from the gallbladder to the duodenum and the colon. These patients may have no symptoms whatever for a considerable period, and later on they develop attacks almost exactly simulating gallstones. There is sudden violent colicky pain and distress, and the patient is put to bed incapacitated. On operation no sign of ulcer, no sign of thickening of the gallbladder, no distinct evidence of any inflammatory condition existing at the time is found. Bands are found, and to secure for the patient complete and permanent relief these bands are divided transversely and sutured longitudinally.

Dr. Roland Hazen, Paris, Ill.: I have been doing work in repairing a ptosed colon, and found a great deal of trouble with adhesions connecting the colon with the stomach, duodenum, gallbladder and ducts. The work that I have been taking up has been based more on the anatomic arrangement of the normal fixed colon. I take the view of a colon as though looking at it from behind, and study what there is

that prevents the colon, either normal or ptosed, from getting all the way down. In dissecting a 5-month-old fetus I found that the descending colon had already fused; it was firmly fixed; I could peel it away without difficulty. The ascending colon was very slightly fixed. These adhesions occur between the outer layer of the mesocolon or the ascending colon and the flank. In addition to that adhesion I found a little band of adhesion that ran from the hepatic flexure up to the gallbladder, not involving the entire gallbladder, but rather a thickening of the edges, and was evidently giving some support, pulling on the descending and ascending colon. There was some node on the surface of the liver, which is undoubtedly the beginning of the formation of the hepatocolic ligament. The only thing that held was this attachment to the end surface of the liver, which involved the bile vessels. Take that in the adult subjects; we have a case in which we have not had any fusion of the ascending colon, but the hepatocolic ligament is developed, and after adult age, with the enlargement of the pelvis, the colon will tend to sag if it is not fastened to the ascending colon; the strain will come on the ascending colon and all bands which go to the liver. Thus we are going to have congestion. Just what rôle the bacteria will play in that case which develops purely from a mechanical start on this basis, I do not know, but undoubtedly bacteria will have some part in that development; but primarily the trouble in these cases is not due to the infection; it is mechanical. On that basis I have examined the adhesions very carefully, and find that by drawing up the hepatic plate you will find that the adhesions radiate from the hepatic plate to the gallbladder, and in cases of cystolith of the gallbladder the adhesions radiate from the gallbladder out in a different direction, and those adhesions attach to something. In the final cases they attach to the gallbladder. If you look into these cases you will find that a great many are due to the colon trying to hold onto something to keep it from falling down. Sometimes the colon is held up by the adhesions, so that these persons have not developed the general symptoms of ptosis.

DR. FRANK SMITHIES, Chicago: The points which Dr. Morris brought out are referred to in the text. Dr. Friedman's observations correspond in a certain degree to the zones of peripheral tenderness or hyperesthesia spoken of by Head and others some years ago. Very likely the points are better made out in gallbladder disease, because we have to do with an infective process, which is frequently quite active. The question of pain indicating gallbladder disease I have emphasized in previous work. Less than a third of our cases of gallbladder disease gave the so-called classic symptoms of gallstones, or gallbladder malfunction.

Dr. Rose asks how we are to control the bacteria in the gallbladder wall. Most people come to the doctor after they are sick. The bacteria have already done damage then. If we pay more attention to the complications of the infectious diseases occurring in early life I feel that we can prevent some of the serious damage done later on in the gall tract.

Dr. Harris' explanation of the adhesions along embryologic lines is very interesting. I think adhesions follow these directions because the lymph stream and the blood stream follow natural bridges, and some of these ligaments are natural bridges.

As to the effect of ptosis in causing pain, I am not so pronouncedly in agreement with the doctor, because I have begun to forget about nine tenths of what I learned twenty years ago about ptosis. We see fewer so-called ptoses now than formerly, and we correct fewer ptoses than we did. I pay less attention to ptosis every day. If the bowel function is normal and the stomach function is normal, I do not care where the viscera are placed.

Operation and Low Blood Pressure.—An operation should not be done to a shocked man unless his blood pressure has been artificially raised above the critical level. Blood transfusion or intravenous injection of the gum-salt solution may be done at the start of an operation, and the pressure may thus be prevented from falling.—*Review of War Surgery and Medicine.*

RÔLE OF PASTEURIAN METHODS IN PROPHYLAXIS OF INFECTIOUS DISEASES IN THE ARMIES

ESPECIALLY IN THE ARMY OF THE ORIENT AT THE DARDANELLES AND IN MACEDONIA *

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The past forty years have seen a complete modification of the methods of hygiene in public health under the influence of the progress of bacteriology. It is surely not paradoxical to say that the present war, with its great agglomerations of men, could not have been possible without the aid of a prophylaxis against infectious diseases.

The expedition to the Orient furnishes us with the most striking demonstration. I was appointed in 1915 as chief of the Service of Bacteriology and Epidemiology for the armies, with a well-equipped bacteriologic laboratory. All our army laboratories are indeed standardized with the help of the Institut Pasteur.

I shall not speak of the serotherapy against diphtheria, which has been employed not only curatively but also prophylactically in the control of epidemics. Nor shall I more than mention the serotherapy of tetanus, which has been systematically practiced among all the wounded since the first twenty-four hours of the war. The serotherapy of cerebrospinal meningitis and of dysentery has also rendered us great service, although the great variety of bacilli has made the latter much less efficacious in certain cases.

VACCINATION AGAINST TYPHOID

The vaccination against typhoid and against cholera has been, on the other hand, of much value. At the beginning of the campaign of 1914, it was only the forces of the regular army who were vaccinated against typhoid, so that numerous cases developed among the reserve. We are able, however, to stop this epidemic by the vaccination of the entire army, employing the antityphoid vaccine of Vincent.

We also encountered among the men of the army of the Orient a certain number of cases of paratyphoid A and B, both in Saloniki and at the Dardanelles. From March, 1916, we made use of the paratyphoid vaccine "T. A. B." of Widal, by which means we eradicated all typhoid and paratyphoid, to such an extent that during the latter half of 1916 the proportion was but one in ten thousand per month, and the cases observed always occurred in individuals, nonvaccinated for one reason or another.

Since May, 1917, we have employed the lipovaccine of Pinoy and Le Moignic, which has had the added advantage of requiring but a single dose. I have seen with much interest that studies of this vaccine have been made in this country by Whitmore, Fennel and Peterson of the United States Army.

PROPHYLAXIS IN CHOLERA, AMEBIC DYSENTERY AND PLAGUE

Vaccination against cholera has been practiced among all the soldiers and officers of the expedition-

* Read before the Section on Preventive Medicine and Public Health at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

ary forces to the Orient, and I had the opportunity of establishing its efficacy in an epidemic arising among the civil population in the town of Koritza on the Albanian frontier in August, 1916. The town comprised almost 10,000 inhabitants and the epidemic was rather severe, with a death rate of from seven to ten persons per day, during the three weeks before we arrived. I sent one of my assistants, Major Lemaire, with the technical councilor, Major Sarrailhè, who was able in the first twenty-four hours to isolate in seven samples the vibrio of cholera, entirely characteristic and verified by a high agglutinating experimental serum from the Institut Pasteur.

With the aid of a local physician, these officers vaccinated the entire indigent population in the period of one week. This resulted in a complete arrest of the epidemic in less than three weeks. Three months later, a French division was billeted in this region without the development of a single case of cholera. The same results were obtained at Corfu by other French medical officers, who succeeded in stopping a similar epidemic that had been introduced by the Serbian soldiers.

At the Dardanelles and in Saloniki we observed a certain number of cases of amebic dysentery by the discovery in the stools of the adult amebas and cysts. These cases were treated by the injections of emetin with complete success.

In order to prevent contamination of fecal origin, we organized a system for the incineration of all refuse and, as much as possible, of fecal matter. When that was not possible, chlorination with lime was employed.

The prevention of plague was foreseen by the installation of a special laboratory in which my assistants performed necropsies on the bodies of all the rats secured each day by a group of men designated for that purpose. Fortunately, we found only a small number of rats infected with the *Bacillus pestis*. There was but one case of plague observed during the year 1916, and that in an indigent stevedore. The house was completely disinfected and the rats of the whole quarter were systematically destroyed.

With the object of coordinating all the services of prophylaxis in the Orient, there was established shortly after our arrival a high commission of preventive medicine and hygiene, which met each week and at which were represented the chief of the medical service of the French army, of the British army, of the Serbian, the Greek and the Italian armies, as well as the director of civilian public health of Macedonia.

PREVENTION OF TYPHUS

One of the most important points was the prevention of exanthematic typhus. The great Serbian epidemic did not reach Saloniki, but we observed a few cases in the Serbian army, as well as two cases among the civilian population of Monastir. Afterward an epidemic with thirty cases and fourteen deaths appeared in the Russian brigade.

Among the French troops there were observed only a few cases of relapsing fever. These few cases were contracted by the soldiers from the civil population. Relapsing fever, which is due to the spirochete of Obermeier, is, in fact, very frequent in Macedonia. During the first Balkan War in 1912, 50 per cent. of the Greek troops located in Macedonia were rendered useless by reason of this infection during the last months of the winter. Exanthematic typhus and relapsing fever are transmitted by lice, a fact now thoroughly established. By means of our systematic measures of disinfection, we were able almost completely to eradicate lice from the French troops. These measures consisted in the installation of shower baths for all the soldiers and the disinfection of their clothing. For the troops in the resting cantonments, the disinfection was accomplished by the so-called "groupes bains douches desinsectisation de Geneshe-Hercher brazier," which consist of 3-ton trucks carrying an apparatus for twelve shower baths and eight autoclaves for disinfection. This permits of passing the men serially and the delousing of one battalion in ten hours. For the troops confined to the trenches, when the nature of the country does not permit of the transportation of the larger apparatus, we employ a smaller one, the "appareil bain douches portatif de Charles Leblanc" of four baths, which weighs only 200 pounds and can be carried on a mule. For the destruction of the lice in the clothing, we employ simply ironing. This system, introduced by Dr. Sarrailhè, is very useful and efficient, if it is repeated at least once a week. The cycle of growth from the egg to the age of reproduction of the louse is twelve days. The destruction is produced by a type of tyndallization, that is to say, that the first ironing destroys a certain number of eggs and lice; and when the process is repeated each week, the progressive generations are also prevented from reaching maturity. We were able to demonstrate in a number of regiments that this method removed the lice effectively in 95 per cent. of the cases.

The epidemic which appeared in the Russian brigade was arrested by the creation of a sanitary barrier which was easily enough established in such a desert region with stations for disinfection and a second hospital for disinfection previous to discharge, furnished with the apparatus just described.

PROPHYLAXIS AGAINST MALARIA

The prophylaxis against malaria was unfortunately less successful, at least during the first year, because of the military conditions in the country, and on the other hand the difficulties in securing prophylactic medicines, quinin, for example, in sufficient quantities. In the winter of 1915 and 1916 I proposed an antimalaria campaign similar to that carried on by Major Craig at Panama. Macedonia, and particularly the valley of the Vardar, is perhaps comparable to the most dangerous tropical regions. At that time I was able to establish the fact that there were 20 per cent. of carriers in a village housing Greek refugees at Zeitenlick, 5 km. from Saloniki, in the neighborhood of the French and English camps. And the endemic index determined by the presence of splenomegaly, studied by Major Mauban, was nearly 50 per cent. among the children. For the 3,000 inhabitants of this village we had the opportunity of practicing quinin sterilization, and were able to diminish very markedly the contamination of the troops stationed in the camps. This was, unfortunately, not possible with the troops assigned to the trenches in the valley of the Vardar and the Butkova. For this group of men, preventive quininization was instituted, but was not efficiently carried out in certain regiments. In addition, the men

were housed in tents with insufficient mosquito netting, so that the contamination was considerable. Further, it was impossible to have sufficient screening for the barracks, the clapboarding of which was poor. An insufficiency of crude oil did not allow of this treatment of the marshes, which were frequently 50 miles in extent, and those in Macedonia were interspersed with numerous marshy-bordered lakes. From July to October, 1916, we encountered a serious epidemic among the French as well as the English troops, with a certain number of cases of the pernicious type. It is necessary to add that our microscopic examinations of the blood demonstrated to us in September and October that the proportion of malignant tertian malaria was 95 per cent.

In 1917, the conditions were such as to allow of a reduction in the number of cases of malaria, thanks to a special service of prophylactic measures against malaria organized with the aid of M. Justin Godard, undersecretary of the Service de Santé. The plan was prepared by Dr. Edmond Sergent, chief of the Pasteur Institute of Algiers; Dr. Etienne Sergent, chief of the Antimalarial Service for Algeria, and Dr. Segroux of the Pasteur Institute of Paris. Following a mission for the study of conditions made by Dr. Sergent and myself in Macedonia, the service was organized with the following personnel: twenty physicians who had specialized in questions of tropical medicine, a woman physician who could talk to the indigent population, 300 nurses to supervise the quininization, all for the mechanical protection of the cantonments, and an engineer with a force of peons for the drainage of the district. The physicians were distributed in their respective districts and were consulted on the location of the camps, which were more easily chosen during the second year of the occupation.

Furthermore, the screening of all the base barracks was accomplished during the winter. All the soldiers were furnished with large individual mosquito nets and their use was enforced by the physicians and nurses under pain of severe punishment. Finally the drainage of all the small marshes neighboring to the camps was carried out. The quininization of the soldiers and of the civil population of the villages in proximity to the camp consisted of 0.4 gm. per day, effectively supervised. I am forced to add, however, as a result of my experience among a certain number of persons, that the preventive quininization even at this dosage is not sufficient to protect against tertian malaria, if the number of infections is considerable. This was the case in Macedonia, where the anopheles is extremely numerous. Thanks to these measures, it was possible to reduce to 75 per cent. the number of cases during 1917, and the pernicious cases occurred but rarely.

CONCLUSION

I may say that the complete eradication of malaria in Macedonia, impossible during the war, would require several corps of excellent engineers, a hundred million dollars and twenty years of labor. We hope it may be accomplished in the future, but at the present time for the protection of our troops we can only employ the mechanical measures against the anopheles, quininization and the drainage of the smaller marshes.

THE PRESENT STATUS OF THE OPERATIVE TREATMENT OF CHRONIC FRONTAL SINUSITIS*

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Today, obliteration of the frontal sinus is attempted only in those cases in which there has been extensive necrosis of the bony wall, and our treatment is directed to establishing ventilation and drainage.

Various operators have devised new methods and modified old ones of opening the frontal sinus intranasally since Schaeffer, in 1890, published his method of penetrating the floor of the sinus through the ethmoid cells. This method had been abandoned until it was revised and improved in 1905 by E. Fletcher Ingals, who later used gold tubes. In the same year it was improved by Segura, we are told by Watson Williams and also by Ingals in their interesting historical reviews of the subject. In 1906 Max Halle described his operation of removing part of the nasal crest with burrs. He has since modified his method by making a flap of mucoperiosteum, which has not proved advantageous in the hands of other operators. Vacher, Goode, Sullivan, Thompson and other rhinologists have added new methods and different technic.

Sluder, by his ethmoid knife operation, aided us. Later Mosher gave us much assistance, as the result of his painstaking anatomic studies, by simplifying the entrance to the sinus intranasally by the method which bears his name, through the agger nasi cell, and according to his later recommendation, through the upper part of the anterior end of the middle turbinate. This has again been made easier, I think, by the curet devised and used by Faulkner.

Then, Watson Williams advised opening the anterior ethmoid cells by cutting through the anterior end of the middle turbinate at its attachment to the outer nasal wall with biting forceps. In discussing Williams' paper, Tilly stated that he removed the anterior end of the middle turbinate. This, as all operators know, must be done when the space between the septum and nasal wall is very narrow. Cases of this type have always been the most difficult for us to handle. Williams also advised breaking down the ethmoid cells posterior to the ostium, as was recommended in greater detail of instrumentation and technic by Freer in 1915. As far back as 1911, Killian stated that he no longer performed the operation bearing his name. Beck's osteoplastic flap operation gives us an opportunity to work from the sinus downward into the nose, while observing each step taken. The fear of the terrible deformity that would result if the bony flap failed to unite has made this too formidable a procedure to me.

When there is extensive destruction of the bony walls, especially the external wall, it is not practical to adhere to any special type of operation. I remember some years ago operating on a beautiful woman of about 40, a time when women are much interested in their personal appearance. When the incision was made, I found a large sequestrum of bone covering the entire sinus, and including much of the superorbital ridge. In fact, nature had made a Beck bony

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flap. When this was removed, there was a step about half an inch deep in the median line. I was much puzzled as to what to do, but chiseled off the anterior wall of the other frontal sinus, obliterating both. Fortunately for me, the patient was pleased with her appearance afterward.

LOTHROP'S OPERATION

The most distinct advance made, I think, in the surgery of the frontal sinus, is the operation devised and advocated by Lothrop. This offers all the advantages of the intranasal operations, and at the same time permits direct inspection of the sinuses and also of the work, step by step, as it is accomplished. It will be remembered that Lothrop recommends first the removal of the anterior end of the middle turbinate and the breaking down of the anterior ethmoid cells with a curet, which frequently gives a free opening into the frontal sinus. This procedure he follows ten days or two weeks before the more radical operation is done. This drainage, as we know, in a large percentage of cases will effect a cure.

His more radical operation is done as follows: A pledget of cotton saturated with a 4 per cent. cocain in epinephrin solution, is inserted in each nostril as far forward and as high as it can be placed. This lessens the bleeding during the operation. Under general anesthesia a curved incision, about 1 inch in length, is made through the eyebrow, beginning at the superorbital notch and extending over to the nose, the periosteum is carefully elevated, and a Vail or Jansen retractor inserted. An opening is now chiseled through the bone into one sinus at the naso-orbital angle, or Ewing's point. The sinus is now carefully inspected and any pus, polypi or granulation tissue removed, care being taken to preserve as much of the mucous membrane intact as is possible. A probe is now passed into the nasofrontal duct and used as a guide, while with curet, rasps and burrs, the cells anterior to the nasofrontal duct are broken down, and the mass of dense bone at the root of the nose, formed by the nasal process of the superior maxillary, frontal and nasal bones, is removed.

The partition between the sinuses is broken through and removed and the intranasal floor of the second sinus removed, whether it is diseased or not. At the same time the operator takes away the upper portion of the nasal septum, thus making a large passage from the now single sinus into the nose, which may be entered readily from either nostril. The external wound is now closed, without packing, and a pressure bandage applied and left on for twenty-four hours. when a dressing of cotton and collodion is applied and permitted to remain for five or six days, when the stitches are removed.

There is no after-treatment required, except a nasal (not intrasinus) douche to remove the increased secretion, due to the irritation produced by the operation. This usually subsides in two or three days.

MINOR ADVANTAGES OF OPERATION

There is no question in my mind but that frontal sinuses which have free drainage and ventilation do much better without being probed or treated in any way, which is usually distressing to the patient. Freer lays stress on this.

The burrs and rasps that have been devised by various operators, Lothrop, Tilly and Lynch, have added to my armamentarium.

We must never overlook the roentgen-ray picture in these cases, preferably stereoscopic pictures. While I have not acquired the proficiency of Beck in interpreting these plates and in being able to say so exactly by them what the pathology is, still they are invaluable to me.

Dr. Fletcher Ingals in a paper last year quotes some one as saying, "The value of an operation is not what it accomplishes in the hands of its inventor, but what can be done with it in the hands of other operators." Hence, my advocacy of this operation, which has proved very satisfactory to me, and to my twelve patients on whom I have used it, six of whom had been operated on by myself or some other rhinologist previously, without being permanently relieved.

An objection has been offered to opening a healthy sinus for increased drainage, for fear that it might be infected. My answer is that it does not, or did not become infected in any of my twelve cases, in only three of which both sinuses were involved.

I examined one of my first patients recently, now more than two years since the operation was performed, and there is still a free opening and the roentgen-ray picture shows a healthy sinus, although the patient had to have an operation on a maxillary antrum.

The variations in the anatomy as shown in Shambaugh's recent paper should make us hesitate to attempt to open all sinuses intranasally without seeing just what we are doing. In one of his specimens, one sinus had no outlet except into the other frontal sinus.

ABSTRACT OF DISCUSSION

Dr. Frank R. Spencer, Boulder, Colo.: We have all been forced to realize how rapidly an opening into the frontal sinus tends to close, even when we have been successful in enlarging the nasofrontal duct, and this closure soon defeats free ventilation and drainage. For this reason all intranasal surgery, on this sinus, is more or less unsatisfactory. The Killian radical operation has become very unpopular except in rare cases, on account of the disfigurement. This shortcoming has been met by the Lothrop operation. However, I should like to emphasize the importance of making the opening into the frontal sinus no larger than is necessary for efficient work, so as to avoid disfigurement, and the importance of making the opening into the nose, from the sinus, as large as the nasal anatomy, in any given case, will permit. Since the former is a temporary opening and the latter a permanent one the reason for this is self evident.

Another feature, which Dr. Moore mentioned briefly, is the importance of removing thoroughly projecting bone in the region of the frontal process of the superior maxillary. This can best be done with the burr. If left undone it gives rise to granulations which tend to close even the large double opening.

Dr. George E. Shambaugh, Chicago: I am in accord with the conclusions of the essayist regarding the question of an external operation. I am coming more and more to the conclusion that satisfactory relief for most of the frontal sinus cases can be reached by intranasal work. It is very seldom that we are required to do any operation for an acute sinus, but where there is recurring acute sinus infection the first step is the removal of the anterior and of the middle turbinate. In chronic cases this should be followed by an exenteration of the anterior ethmoid cells. With this accomplished one usually has little difficulty in making a satisfactory widening of the nasofrontal duct. The use of rasps are of great assistance in this work. In most of the cases of chronic sinus empyema we can relieve a patient of the larger part of his discomfort, even in cases in which the complete cure of the chronic process does not result from the nasal operation. In my opinion the external operation should be reserved for cases in which

carefully carried out intranasal work fails to relieve the patient from annoying headache and in cases in which there is a threatened intracranial complication. Such cases will arise only exceptionally in one's experience.

DR. JAMES J. PATTEE, Pueblo, Colo.: Frontal sinusitis, requiring operation, is a troublesome affection, and the operation of choice should be determined with care. From a general survey of the published opinions there is, in my judgment, a progressive increase in the number of intranasal operations with a corresponding lessening of the external. I am in accord with this order of things. I agree with Dr. Shambaugh that it is applicable in the vast majority of cases. In rare cases we must resort to external measures.

The Killian operation fails occasionally, even in the hands of our best operators. It frequently produces much disfigurement and in some cases fails to afford ample permanent drainage, the feature on which its greatest claims are based. Dr. Ingals' statement is very true. The intranasal operation requires intimate anatomic knowledge and much experience. The narrowest part of the nose is on a plane with the canthi. The Lothrop operation has the advantage of opening the sinus very near this point, a great advantage. The Lothrop operation permits of thorough work; establishes adequate drainage; affords the best vision, and offers the most direct route to the site of greatest difficulty and danger. It permits healing in the shortest time and minimizes untoward after-effects.

Military Medicine and Surgery

THE TONSILS AS FOCI OF INFECTION IN STREPTOCOCCUS HEMOLYTICUS CARRIERS *

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The study of hemolytic streptococcus infections, which has been stimulated by the Army experiences of last winter, naturally includes the subject of carriers. We have done some work in this field and are convinced that the tonsils play a part that should be emphasized. It has already been shown that throat swab cultures demonstrate the presence of hemolytic streptococci in various percentages of individuals and that hemolytic streptococcus complications, for example, in measles, occur only in those with positive throats.[1] Throat swab cultures for hemolytic streptococci, therefore, have a practical value in the maintenance of clean and infected wards which has been confirmed by experience at this hospital.

INFECTION OF THE TONSILS

With the established importance of positive throat cultures as a starting point, our attention was directed toward localizing the focus of infection if there is one. For this purpose we made swab cultures in positive throat cases from each side of the nose, from the pharynx, from each tonsil and from the saliva. In making the nasal cultures, the swabs were passed into the nasopharynx. The results, which are shown in Table 1, were striking. The cultures of nasal swabs were either negative or showed a few hemolytic streptococcus colonies; the pharynx cultures were moderately positive; those of the saliva were slightly so, but the tonsil cultures showed in every case a rich growth of hemolytic streptococci. In the isolation and identification of hemolytic streptococci the methods adopted by the Medical Department of the United States Army were followed.[2]

TABLE 1.—RESULTS OF SWAB CULTURES IN POSITIVE THROAT CASES *

Case	Right Tonsil	Left Tonsil	Pharynx	Saliva	Right Nostril	Left Nostril
1	+	+++	—	—	—	—
2	++	+++	+	—	—	—
3	++	++	++	+	—	—
4	++	++	++	—	—	+
5	++	++	+	—	+	+
6	+++	+++	++	+	+	—
7	++	++	+++	+	+	—
8	+++	+	+++	—	+	+
9	++	++	+++	—	+	+

* Positive findings are thus indicated: +, few colonies; ++, many colonies; +++, innumerable colonies.

These results pointed to the tonsils as possible foci of infection. One hundred pairs of excised tonsils were then examined by means of crypt cultures made with a platinum loop. Seventy-five pairs were found positive. The degree of infection in one or both tonsils of each pair was found to be as given in Table 2.

TABLE 2.—DEGREE OF INFECTION OF DISEASED TONSILS BY HEMOLYTIC STREPTOCOCCI

Pure hemolytic streptococci	31	70%
Predominating hemolytic streptococci	23	
Many hemolytic streptococci	16	
Few hemolytic streptococci	5	
No hemolytic streptococci	25	

These tonsils were removed on clinical grounds on account of size, presence of discharge from the crypts, cervical glandular enlargement and possibility of focal infection and not on account of the carrier state except in a few instances. The results of this series of examinations made it clear that diseased tonsils harbor hemolytic streptococci in a large proportion of cases.

The condition of the surface of tonsils was then compared with that of crypt contents in regard to streptococci, and it was clearly shown that the ordinary throat swab cultures may be negative while loop cultures from the crypts may be positive. The findings were:

Normal cases, 50; percentage of throat swab cultures positive, 28; percentage of tonsil crypt cultures positive, 50; percentage of error in throat swab cultures, 44.

Additional evidence of the importance of the tonsils in carriers is found in the results of throat cultures taken after tonsillectomy, which will be referred to later.

Out of twenty-five cases of typical acute follicular tonsillitis, only one failed to show a rich culture of hemolytic streptococci. We believe that the ordinary case of tonsillitis is most frequently caused by hemolytic streptococci, and that the organisms in many cases persist and reinfect the individual or spread to others.

In persistent carriers of any infectious disease, some focus seems necessary, as pathogenic organisms do not seem able to live indefinitely on healthy tissue. In typhoid and cholera carriers the gallbladder, liver or kidneys are recognized foci rather than the intestine or

* From the Laboratory Service and the Ear, Nose and Throat Section of the Surgical Service of the Walter Reed General Hospital, Washington, D. C. In this work the writers were assisted by: Capt. C. O. Stimmel, Capt. William H. Huntington, Lieut. S. A. Alexander and Lieut. E. Sturm.

1. Cole, Rufus, and MacCallum, W. G.: Pneumonia at a Base Hospital, THE JOURNAL A. M. A., April 20, 1918, p. 1146. Levy, R. L., and Alexander, H. L.: The Predisposition of Streptococcus Carriers to the Complications of Measles, ibid., June 15, 1918, p. 1827.

2. Methods for the Isolation and Identification of Streptococcus Haemolyticus, Adopted by the Medical Department, U. S. Army, June 1, 1918.

urinary tract as a whole. In diphtheria carriers the tonsils are being recognized as the principal focus.[3] We believe the same is true in streptococcus carriers. The possibilities, of course, include the nose, the sinuses, the gums and the adenoids; but in our experience the tonsils are by far the most frequent foci. Sections made of positive tonsils have usually shown erosion of the epithelium of the crypts with exudate.

IDENTIFICATION OF CULTURES

One hundred strains of streptococci have been studied by Captain Stimmel for cultural reactions in His sugar mediums with results shown in Table 3. In this work each tube was checked for purity and growth by smears and by transfers to blood agar plates. In case of contamination of any tube or lack of growth in negative tubes, the work was repeated. Fresh serum was found necessary for good growth, and serum water controls were used without sugar, as some serums naturally contain over 0.5 per cent. of glucose. Tests were also made for bile solubility, hemolysis in blood broth and morphology. The results were clean cut and uniform.

TABLE 3.—CULTURAL REACTIONS OF STREPTOCOCCI

Source of Strain	Number	Glucose	Lactose	Saccharose	Mannite	Maltose	Dextrin	Inulin	Salicin
Tonsil	43	+	+	+	−	+	+	−	+
Throat	26	+	+	+	−	+	+	−	+
Empyema	18	+	+	+	−	+	+	−	+
Miscellaneous (middle ear, etc.)	11	+	+	+	−	+	+	−	+

In other words, no differences were found in strains from empyema fluids and surgical conditions, as compared with those from throats and tonsils. Of course, there may be differences in immunity reactions; but for the present in the prophylaxis of pneumonia and empyema, no differentiation is available. Several tonsil strains tested for virulence were low, requiring 0.5 c.c. to kill a mouse; but by mouse passage they became more virulent.

THE CURE OF CARRIERS

In our experience the only radical method of curing carriers is excision of the tonsil, which is successful except in a few cases in which other foci are present in the gums or elsewhere. The problem of chemical or mechanical disinfection has been attacked at this hospital as well as elsewhere with some enthusiasm, but a short experience has shown the futility of most measures. It has been found that a certain number of carriers on no treatment give two successive negative cultures in about three weeks. With dichloramin-T, Dobell's solution and hot alcohol, a few carriers cleared up in about the same time.

Under daily use of 25 per cent. silver nitrate, several cases became negative in about one week; but in some of these cases the crypts were still positive after negative throat cultures. In order to test the disinfecting power of silver nitrate, several excised streptococcus tonsils were submerged in 25 per cent. silver nitrate for five minutes. They were then washed in salt solution and incised, and cultures were made from the crypts. All these cultures were positive. In cases with a few open crypts, the silver nitrate treatment may be effective; but in most tonsils it is impossible to sterilize the crypts by this means.

3. Keefer, F. R.; Friedberg, S. A., and Aronson, J. D.: A Study of Diphtheria Carriers in a Military Camp, The Journal A. M. A., Oct. 12, 1918, p. 1206.

The difficulty in sterilizing the tonsil may be realized by attempting to inject all the crypts with lampblack in paraffin; after all visible openings have been injected and the paraffin allowed to cool, incision of the tonsil will show a number of perfectly good crypts that have escaped the injection. If this is so with excised tonsils, the impossibility of mechanically or chemically disinfecting this tissue in vivo is easily understood.

The change noted in throat cultures after tonsillectomy was striking as compared with any other method. Twenty-seven out of thirty-one cases showed a second consecutive negative culture in eleven days. In the cases that did not clear up under tonsillectomy, there were foci in the nose or gums, and the cases became negative when these were attended to. No case of a carrier has been found in men who had previously had their tonsils properly removed.

COMMENT

It is evident that the removal of diseased tonsils is indicated not only for the good of the individual but also for the good of others, because it reduces the number of carriers of *Streptococcus hemolyticus*. Whether a carrier with healthy tonsils should be operated on simply because he is a carrier may be a debatable point; but in view of the lack of standards for "healthy" tonsils, it is justifiable to operate in our opinion, provided the case does not clear up in a few weeks spontaneously or under silver nitrate.

The practicability of materially reducing the number of carriers by this means is also a debatable point, as the number of carriers may be large, running at times from one third to one half of the military population. It is at least possible, however, to examine the tonsils of chronic carriers and to remove those tonsils which are manifestly diseased.

CONCLUSIONS

1. The tonsils are the principal foci of infection in throat carriers of *Streptococcus hemolyticus*.

(*a*) Cultures taken from different parts of the nose, mouth and throat show more streptococci in the tonsils than elsewhere.

(*b*) Cultures from excised tonsils show streptococci in 75 per cent. of cases.

(*c*) Crypt cultures show a higher percentage of positive results than surface cultures.

(*d*) Excision of the tonsils renders the throat negative in nearly all cases.

2. The streptococci isolated from tonsils and throats show no cultural difference on sugar mediums from those obtained from empyema fluids.

3. Excision is the only radical method of curing carriers of the infection.

(*a*) Dobell's solution, dichloramin-T and hot alcohol had little better effect than no treatment.

(*b*) Silver nitrate, 25 per cent., gave the better results in negative throat cultures, but the crypts frequently remained positive.

4. The presence of hemolytic streptococci in pathologic tonsils is an additional reason for their removal.

Obligation of Physician to Report Births.—The state protects the physician in his practice, and on ethical ground has a right to expect him to comply with the laws affecting his practice, and on legal grounds to demand the registrations of births as a matter of public welfare. Court decisions have held this many times.—W. J. V. Deacon, M.D., State Registrar, Kansas.

STUDIES ON IRRITABLE HEART

PRELIMINARY REPORT

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AND

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In an attempt to discover if there is any method of diagnosing the so-called neurocirculatory asthenia before the men enter service, we have been engaged in an intensive study of the syndrome. We feel that the work has gone far enough to justify us in presenting our results briefly, leaving the more detailed statistics for later presentation. Our purpose is to state our reasons for considering that we can detect these cases at the recruiting depots or at the Local Examining Boards and thus save both applicant and government time and money.

Careful study of the reports of Lewis[1] and his associates leads us to believe that we are not dealing with the same class of patients. His patients were invalided from the front, where overexertion and shell shock were factors. Our patients have come from civil life, where men have been doing their daily tasks under no great strain. He was able to return 20 per cent. to active duty. Our experience coincides with that of Major Robey,[2] who found that these men were not benefited by graded exercises. These men, for the most part, had been working daily at some vocation. The work was uniform, required no sudden strain, no sudden call on the reserve of the heart. Frequently men told us that they themselves had found certain work too hard and had voluntarily sought easier and, at times, sedentary, jobs. This distinction, we consider, is important.

We have studied 435 cases. Two hundred of these were referred for examination at Camp Upton and Camp Beauregard (F. M. S.). The 235 cases that both of us have studied more in detail at Jefferson Barracks will, for the most part, form the basis of this report. These represent the referred cases at the recruit depot among 20,000 examinations during the months of July and August.

HISTORY

The careful history from the man who has tachycardia is almost the most important factor in the determination of a man's fitness for the Army. The men who have shortness of breath, a feeling of exhaustion out of all proportion to the exertion made, palpitation of the heart, precordial pain and dizziness on exertion in civil life have invariably failed in their military training. The 200 patients that were examined by one of us at Camp Upton and Camp Beauregard were men who had broken down in training. With very few exceptions, they complained of subjective symptoms that dated back into civil life, in some instances as far back as childhood.

Our plan has been to enter all patients into the hospital for observation who could not be rejected at once in the examining barracks. Patients with frank exophthalmic goiter, of evident hyperthyroidism and of patent pulmonary tuberculosis were rejected at once. The cases studied represent the men who were not normal, who had tachycardia and who, we considered, had not enough symptoms and signs to reject at once. One hundred and five patients have been put in hospital and been given graded exercise. The time in the hospital varies from four days to three weeks. Sixty-five have been discharged as unfit, all of whom had symptoms prior to the time they were drafted. Eighteen have been accepted for military service, all of whom had no subjective symptoms on exercise. These men were observed because of tachycardia.

ETIOLOGY

The irritable heart is frequently a symptom of some well recognized disease. In the study of 235 cases from the standpoint of etiology, the diagnosis of pulmonary tuberculosis was made in eighty-eight. In no instance was the opinion of one man taken as final. Frequently, the diagnosis was made on the basis of the findings of three or four examiners. Forty-one of the most doubtful cases were observed in the hospital. Here, these patients were given graded exercises, the temperature was taken every three hours, and frequent chest examinations were made. Roentgenograms were made in a number of cases, and were often of considerable value. The exercise caused a rise of temperature and brought out positive chest findings in cases which, previous to exercise, were only suspicious.

Seventy-three patients were discharged with the diagnosis of hyperthyroidism.[3] In all these, there were definite eye signs, as lagging of the lids, poor convergence and occasionally exophthalmos. The thyroid gland was enlarged in every instance. There was a tremor of the hand and tachycardia. The systolic blood pressure was usually increased, ranging from 120 to 170 mm. of mercury.

In thirty cases that gave a typical history of "effort syndrome," nothing was found to account for the condition. Twenty-one of these patients were rejected in the examining barracks with the diagnosis of irritable heart without hospital observation. On the basis of our later results, we feel that, possibly, tuberculosis could have been found in some of these men, had they been put under observation.

Three men had the symptoms and physical findings of early cirrhosis of the liver. One had chronic malaria, one bronchial asthma, and twenty-one are still in hospital under observation.

Eighteen men were sent to duty. These were men who had been sent to the hospital because of tachycardia, and had at no time subjective symptoms. They all responded to exercise well and, so far as we know, are having no difficulty in their training.

GRADED EXERCISES

The graded exercises have proved very valuable, first, in the determination of a man's fitness for the Army, and second, in establishing the diagnosis.

Those individuals who are not able to do the simplest exercises without distress and who have shown no improvement from day to day are very obviously not

1. Lewis, Thomas: Report, Medical Research Committee, London, 1918.
2. Robey, W. H., Jr., and Boas, E. P.: Neurocirculatory Asthenia, THE JOURNAL A. M. A., Aug. 17, 1918, p. 525.
3. We have called these cases hyperthyroidism. We ourselves are not satisfied with the term. We feel that exophthalmic goiter would probably be a better term to use as all the cases were potentially Graves' disease. The term is in such general use that we have here employed it to designate cases not frankly exophthalmic goiter, but with certain of the Graves' disease stigmata.

fit for military service. Those men who have given a history of having had subjective symptoms in civil life have all made complaints following these exercises. Those cases in which the irritable heart had as its basis pulmonary tuberculosis have usually responded poorest to the exercises.

In forty-one cases, we feel confident that the exercises brought out positive findings in the chest and caused a rise in temperature, so that we were justified in making the diagnosis of pulmonary tuberculosis. Thirteen of the patients under observation were discharged with the diagnosis of hyperthyroidism. The exercises in those cases brought out signs that previously were only suggestive.

SUMMARY

For the present, we feel safe in saying it is possible to detect the irritable heart before a man is inducted into service. This can be done, first, by taking a careful history, paying particular attention to previous attacks of dizziness or fainting, exhaustion, precordial pain, and pounding of the heart on *slight exertion;* second, by noting the unusual physical response to the hopping exercise and the increase in the pulse rate out of all proportion to the exercise.

THE INFLUENZA EPIDEMIC AT CAMP DIX, N. J.

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The influenza epidemic began at Camp Dix, September 15, and ended, October 6. The number of daily admissions increased rapidly and reached the maximum, September 26, on which day 806 patients were received, making a total of 4,025 in the hospital on that date. The number then decreased daily, reaching the normal average of eighty admissions, October 7. During the twenty-two days of the epidemic, 6,500 patients were cared for. Approximately 6,000 of these men had influenza. There have been 800 deaths due to the epidemic. Four of our nurses and one dietitian died during the epidemic, contracting the disease while on duty. One medical officer was taken ill while on leave and died from bronchopneumonia a few days later at the Massachusetts General Hospital.

When the epidemic began to subside and the hospital discharges to increase, wards were consolidated as rapidly as possible. The emptied wards were renovated and disinfected thoroughly and all bedding sterilized in the steam autoclave before being used again for noninfluenza patients.

ADMINISTRATION

To take care of the large number of patients, all of the forty-eight wards of the hospital, except six, were turned over to the medical service; but in spite of this, it was found necessary to expand, and an annex was started in the camp. Through the cooperation of the headquarters authorities and the camp surgeon, a number of empty barracks were quickly equipped, a medical and nursing staff organized, and in this way eighteen additional wards with accommodations for 1,100 patients were provided. The annex was used for the most part for convalescent patients, and the patients were moved there from the base hospital as rapidly as safety permitted. Our rule was not to transfer patients until the temperature had been normal for forty-eight hours. They were kept in bed at the annex for another forty-eight hours and not discharged until the temperature had been normal for ten days.

By this plan overcrowding was avoided and, as soon as possible, arrangements were made by which each influenza and pneumonia patient in the hospital was given 100 square feet of floor space. All patients, including those on the porches, were placed in cubicles. Nurses, medical officers and orderlies wore gauze mouth and nose coverings while on duty. Nasal discharges and sputum of patients were disinfected. A 2 per cent. solution of tincture of iodin in physiologic sodium chlorid solution was used for oral and nasal hygiene. Floors of all wards were gone over daily with a cloth wet in disinfectant. Individual drinking cups were provided. Particular care was given to the disinfection of thermometers and other utensils as they passed from patient to patient. Enlisted attendants in wards wore white cotton coats and trousers. Medical officers and nurses were instructed to disinfect carefully their hands before and after the handling or examining of patients and before leaving the ward, or passing from one class of patients to another. Pails containing a disinfecting solution were provided at convenient places in every ward.

Blankets, mattresses, mattress covers and pillows were disinfected by steam before being used for another patient. Soiled linen was immersed in a 2 per cent. dilution of liquor formaldehydi before being sent to the laundry. The clothing of patients was disinfected by steam or formaldehyd before discharge.

For patients too ill to use covered sputum cups, paper napkins were provided for the reception of sputum and nasal secretions. At the head or side of each bed a paper bag was fastened with a pin or adhesive plaster. These bags were used for napkins, gauze, swabs and other infected refuse and burned when full.

The medical service was directed by the medical chief and an assistant. There were ten ward supervisors, admitting officers and consultants. These men met with the chief for a conference at 8 a. m. daily, when the work of the day was outlined and discussed. There was a daily conference of all medical officers attached to the medical service (about eighty-five officers at the time of maximum stress) at 1:15 p. m. when matters requiring advice, questions of discipline, treatment, etc., were gone into fully.

The patients were grouped as rapidly as possible, all uncomplicated influenza cases being kept together, and the cases complicated by pneumonia gathered in separate wards.

The following laboratory tests were ordered for all pneumonia patients:

1. Routine urine examination.
2. Urine precipitin test, for type of pneumococcus.
3. Blood examination: white corpuscle and differential blood count.
4. Blood culture (only in serious cases).
5. Sputum: Collected in sterile Petri dish, after patient had rinsed mouth and throat with physiologic sodium chlorid solution, to eliminate contaminating organisms as much as possible; for smear and white mouse necropsy to determine the type of pneumococcus.

The following rules are laid down for the guidance of ward surgeons in the general management of convalescent pneumonia patients:

1. It is advisable that in all serious or severely toxic cases of pneumonia, the patient shall remain in bed for at least two weeks after temperature is normal.
2. Convalescent patients are to be transferred to the convalescent ward, as soon as this can be safely done.
3. No patient will be transferred without the approval of the consultant. Patients so transferred will be carried on litters, not wheel chairs.
4. Before discharge from the hospital, all pneumonia patients are to be sent to the roentgen-ray laboratory for fluoroscopic heart examination and cardiac measurement.
5. Generally speaking, no patient is to be discharged until the heart is normal in size, as determined by fluoroscopic measurement.
6. No influenza patient is to be returned to duty until the temperature has been normal for ten days.

All ward surgeons were repeatedly warned to be on the alert for the early detection of empyema and were given these instructions:

1. Consult your supervisor as to advisability of exploration.
2. Technic of Exploration: A 10 to 20 c.c. Lüer syringe and appropriate needle. One per cent. cocain anesthesia by infiltration at site of puncture. Send fluid to laboratory (in syringe in which fluid is obtained) for smear and culture labeled "Chest fluid for smear and culture."
3. Roentgen ray to be requested as indicated.
4. Aspiration: If exploration has been advised and if fluid is sterile, do not remove by aspiration until after consultation and unless something in clinical condition warrants it, i. e., exacerbation of fever, pressure symptoms, respiratory distress, etc.
5. Repeated explorations are to be avoided on account of danger of conveying fresh infection from lung to pleura incident to puncture of lung by exploring needle. The pleural fluid may be sterile. Avoid infecting it.
6. If fluid is thin enough to run through a Potain aspirating outfit, it should be removed in this way, as often as symptoms indicate. If after consultation a case is considered to be one requiring thoracotomy, the sick soldier will be transferred to the surgical ward for operation.

In addition to the large stationary outfit in the roentgen-ray laboratory, we have two portable bedside machines. These were kept almost constantly in use during the epidemic.

CLINICAL FEATURES

The usual history was one of gradual onset with prodomes for four or five days prior to admission—consisting of headache, malaise, backache, myalgia, fever and chills or chilly sensations, and marked prostration. There was a history of anorexia, and of aggravation of symptoms, after drill or exercise. Occasionally the onset was sudden, sharp and severe. On admission there was cough, often with rusty sputum, a temperature of 103 F., occasionally hyperpyrexia, respirations of 28 or 30, the pulse between 80 and 120. A low temperature in a severe case was an unfavorable sign. The blood count showed usually leukopenia. The urine contained albumin and casts. The patients looked very ill, but often did not feel so. Few complained of sore throat or the early sticking pains in the chest, aggravated by coughing, so commonly observed in beginning pneumonia.

One third of our cases presented frank signs of pneumonia. Every patient who had fever, prostration, rapid pulse, increased respirations, cough and bloody sputum was at once put down as a pneumonia suspect, which diagnosis could usually be confirmed later by physical signs and roentgen examination.

Frequently no physical signs of pneumonia were apparent on the initial examination. A day or two later bronchopneumonia was discovered, the lobules subsequently tending to become confluent. This condition sometimes gave the physical signs of a lobar pneumonia, but the real condition was repeatedly demonstrated at necropsy. The roentgen ray was an invaluable aid in the diagnosis of such cases.

The outstanding feature of the disease was the extreme toxemia noted in the serious cases. We could predict almost from the first inspection the outcome of each case. There has been a sharp line of demarcation between the serious and mild cases. In the former, many patients developed a cyanosis early in the disease and died promptly, after periods varying from a few hours to three days after admission.

The cyanosis appeared early and was progressive. It was a fairly constant and characteristic symptom in the severe cases. This intense cyanosis was a striking phenomenon. The lips, ears, nose, cheeks, tongue, conjunctivae, fingers and sometimes the entire body partook of a dusky, leaden hue. Frequently this cyanosis was apparent before there were any demonstrable physical signs of pneumonia. The cause could not be ascertained, a few spectroscopic readings failing to show absorption bands of methemoglobin. As necropsy revealed marked so-called compensatory emphysema in these cases, and as cyanosis is a common accompaniment of emphysema, possibly this was in some way accountable for the condition. Otherwise a purely mechanical conception of the mode of production of the cyanosis seems untenable. Lividity, occurring early in the disease proved to be an ill omen.

Very often this cyanosis came on suddenly in patients who had been doing well. It was not due to cardiac dilatation. The pulse was often slow, full and regular in such cases, and remained so, with a rate under 100, almost until death.

The disparity between temperature and pulse was striking. Patients with temperature between 104 and 106 not infrequently had a pulse rate below 80. This we regard as a strong point in differential diagnosis between these influenzal pneumonias and those of pure pneumococcic origin.

The disease was a veritable plague. The extraordinary toxicity, the marked prostration, the extreme cyanosis and the rapidity of development stamp this disease as a distinct clinical entity heretofore not fully described.

It is entirely different from our previous pneumonia epidemics. It is fair to state that it is primarily a profound, rapidly progressing septicemia and toxemia in which pneumonia is an important but somewhat secondary factor.

There was noted in many instances a distinct tendency to relapse. In several of our mild cases, after a day or two of nearly normal temperature, exacerbations occurred and the infection changed to the severe, toxic type.

Herpes labialis was relatively infrequent, but became more common as the disease advanced. It was seemingly of little help in prognosis, as many with herpes died, contrary to the teachings of the older clinicians.

The sputum showed varying characteristics. It was mucoid, mucopurulent, blood streaked, frothy and bloody, the blood pure as in infarct.

In one of our cases it was thin, brown, without froth and homogeneous (prune juice variety). At times it was rusty but lacking tenaciousness and of the consistency of typically pneumonic sputum; it was odorless. In one case the patient coughed up a large quantity of homogeneous, thick, purulent, greenish sputum at one time.

Necropsy in this instance revealed multiple bronchopleural fistulas leading to an encapsulated empyema on the right side.

Tachypnea was constant and variable in rate. The expiratory grunt was uncommon.

The cough differed materially from that of lobar pneumonia, being free, often painless, sometimes paroxysmal, resembling the cough of pertussis. One may reason from this that pleurisy was relatively uncommon as an initial feature. Pleuritic rubs were occasionally heard, however, while diaphragmatic pleurisy with its referred pain was not uncommon, often simulating a condition suggestive of appendicitis.

Flushing of the face was common. An early generalized erythema resembling that of scarlatina, most noticeable on the chest and back, was often observed. Miliaria (sudamina) was common later in the disease, especially in lethal cases in which sweating was frequent and excessive.

The throat was usually injected, but not painful; the tonsils were not swollen as a rule; there was marked conjunctival congestion at the outset of the disease. The tongue was variable: usually coated, moist in milder cases, dry, cracked and occasionally bleeding in severe cases. Sordes appeared frequently on the teeth.

Hoarseness was frequent, due either to the trauma of coughing or to superficial laryngeal ulceration or edema, as demonstrated at necropsy.

The mental condition was either apathetic or there was an active delirium. Cerebration was slow at the onset; the sensorium was numb; a noticeable incident in attempting to elicit history was the frequent apparent disregard of one's question or a response with an interrogatory and blank "What?" or "Sir?" Possibly this was due to a defect of ratiocination, rather than a faulty sense perception (tubotympanic catarrh with retracted membrana tympani or straight lethargy). The patient's assurances and statements as to the condition in many instances were unreliable, a moribund patient stating that he felt very well, requesting permission to get out of bed, reading the daily newspaper in some instances audibly and intelligently, or laying plans optimistically for the future. In other cases, apprehensiveness was most striking, the patient fearing for the future, predicting in a gruesome way the time of death, and making requests to be carried out posthumously. In moribund patients, motor and psychic restlessness was remarkable. In some cases the typical typhoid state existed: stupor, low muttering delirium, subsultus, tendinum, carphology, incontinence of urine and feces; one patient lay for several days stupid with the eyes wide open following imaginary objects about the ward (coma vigil).

In the lungs, the physical signs varied from impairment of resonance, especially over the lower lobes, with diminution of the vesicular murmur; with showers of crepitant and later subcrepitant râles to straightforward signs of consolidation, namely, dulness, bronchial breath and voice, increased fremitus and whisper with a few consonating râles. Often the only evidences of early pneumonia were the signs first enumerated and these confined to a small area or a number of small areas, most commonly at the upper part of the right lower lobe or in either axilla, high up.

In the abdomen, meteorism occurred in some cases; in certain lethal cases it was excessive. Abdominal pain and tenderness were frequent, possibly not entirely due to pleurisy, but in the light of necropsy findings, to infection and hemorrhages in the rectus muscles. In one case necropsy revealed the presence of bilateral abscess in the lower rectus (Zenger's hyaline degeneration). The liver percussed large but was not often felt, owing to abdominal resistance. The spleen could be felt at or just below the costal margin in about one third of our cases. This finding was of little value, however, as many of these subjects were of the status lymphaticus type, in which cases splenomegaly is often observed.

Weakness and tremulousness of the extremities were noticeable manifestations in many cases.

Among accidents of the disease may be noted one case of death shortly after admission with no forewarning, and one case of sudden death many days after febrile period when the patient was regarded on the high road to convalescence.

EMPYEMA

There have been fewer cases of empyema in this epidemic than might be expected, owing to the fact of the extreme toxicity of the disease with the result that death has occurred early. Most of the cases examined postmortem showed lesions in the pleura which would undoubtedly have resulted in empyema had the patients lived longer. Twenty cases of frank empyema have been discovered up to the present time.

Our experience here has taught us that early operation is not advisable in empyema. Aspiration with the Potain apparatus is resorted to when fluid is demonstrated to be present in the pleural cavity, unless the fluid is found to be sterile, in which event it is not removed. Aspiration may be repeated at two to four day intervals. Many patients do well under this plan of treatment; and if a costectomy is later deemed advisable, the patient's chances of recovery are very much enhanced if this operation is delayed until the acute stage of the disease has been passed, and the patient has begun to immunize himself.

The following type case illustrates the wisdom of this procedure:

Col. F. D. L., taken ill while in New York, Sept. 21, 1918, had a severe chill the next day at 3 a. m. He traveled back to Mount Holly in the afternoon. He complained of fever, chilliness and drowsiness. Signs of a diffuse bronchopneumonia with involvement of all lobes quickly developed. On the fourth day there was a remission in temperature and the patient felt better, but on the fifth day he had an exacerbation and the condition rapidly became critical. His fever was continuously high and expectoration was bloody. There were several attacks of hematemesis and one rather severe hemoptysis. The patient became delirious, September 28. This condition persisted one week. He was cyanosed and toxic, with signs of dilatation of the right ventricle and myocardial failure. The pulse rate ranged between 140 and 150, with respirations between 44 and 50 a minute. A pronounced jaundice, due probably to a hemolytic infectious process, developed about this time. On the fifteenth day, signs of fluid developed at the base of the right chest. Exploration in the eighth interspace at the posterior axillary line revealed a cloudy serofibrinous exudate, which on smear and culture showed the staphylococcus. Next day, 250 c.c. were removed by aspiration. On the eighteenth day, 400 c.c. of slightly

cloudy serous fluid were removed, and on the twentieth day 600 c.c. of frankly purulent fluid were obtained. On the twenty-third day, 1,120 c.c. of similar fluid were removed by aspiration. After this aspiration the patient's condition began to improve at once, and at present writing his temperature is normal, and the prognosis for recovery is excellent. The sputum on white mouse necropsy showed the Type IV pneumococcus. The urine contained albumin and casts. Cultures of the blood were made twice but were negative on each occasion. All aspirated fluid has shown a pure culture of *Staphylococcus aureus.*

OTHER COMPLICATIONS

The complications other than empyema associated with the epidemic were those ordinarily encountered in an infectious disease of great virulence. Pulmonary edema was a comparatively frequent terminal condition. One of the most striking of the complications was hemorrhage from the mucous membranes, especially from the nose, stomach and intestine. Frequently pneumonia patients would have hemoptysis like the hemorrhage of tuberculosis. Bleeding from the ears, and petechial hemorrhages in the skin also occurred. Purpura was seen rather frequently. Other complications were phlebitis, thrombosis, or embolism of peripheral arteries (with gangrene of the foot in two cases), toxic erythema, vomiting, diarrhea, conjunctivitis, convulsions, purulent peritonitis, inflammation of the accessory sinuses and of the middle ear, and pericardial effusion. A pronounced jaundice, not obstructive, as the stools are not acholic and probably of infectious origin, was noted in many of our severe cases. Retention of urine was not uncommon.

In several instances the infection produced a pronounced hemolytic effect with rapidly progressive anemia. In one instance, that of a medical officer, the red cell count was reduced to 1,600,000, with 50 per cent. hemoglobin on the fifth day of his disease. This patient is recovering.

A report of our series of cases, twenty in all, showing subcutaneous emphysema of the tissues of the neck, face, upper portion of the chest and arm will be published elsewhere.

Other rarer complications were meningismus, fibrinous and serofibrinous pleurisy, rupture of an encapsulated empyema into the bronchus, thyroiditis, pneumothorax and cerebral thrombosis or embolism (one case showed hemiparesis, hemianesthesia, and probably hemianopia).

TREATMENT

Influenza cases were treated symptomatically. Codein or heroin was found useful in relieving the distressing cough. Medicated steam vapor inhalations were found useful in relieving laryngeal irritation.

In the pneumonia cases, digitalis is begun early and given in full dose for forty-eight hours. It is then discontinued or reduced to one or two doses daily, after the heart muscle is digitalized.

Abdominal distention is guarded against, and when symptoms of this condition develop, an enema is given or, if necessary, pituitary solution hypodermically is administered.

If the patient is toxic or unable to take fluid freely by mouth, water is given by proctoclysis, hypodermoclysis or intravenous administration.

In the pulmonary edema cases, postural treatment, the Trendelenburg position being employed, was found useful in a few instances; in others it seemed to add to the distress. Atropin or belladonna did not prove of any value in these cases.

The diet that we have recommended for influenza and pneumonia cases is a nourishing one providing calories in excess of 3,000 a day. It includes such articles as gruels, broths, purées, eggs, and milk fortified with cream and lactose.

To lessen the danger of relapses and exacerbations, we believe it is of the utmost importance to keep all patients in bed until the temperature has been absolutely normal for at least forty-eight hours. The rule not to discharge patients until the temperature has been normal for ten days has been rigidly enforced.

SERUM THERAPY

Serum was administered in cases in which the laboratory reported the Type I pneumococcus. It was given only after desensitization and under the direction of the medical officer to whom the supervision of pneumonia patients had been entrusted. It was administered intravenously in doses of from 60 to 100 c.c. at twelve hour intervals until the temperature remained below 101 F.

SPINAL PUNCTURE

As many soldiers who died from pneumonia were shown at necropsy to have had an infection of the meninges with the pneumococcus organism, in a few instances of Type I, a lumbar puncture was advised in every case in which any symptoms of meningeal irritation developed. The spinal canal was drained, and the fluid withdrawn was sent to the laboratory for examination.

The precipitin test on the spinal fluid is rapidly done and the type thus easily determined. If the laboratory reported the Type I pneumococcus, serum was administered at once intraspinally (20 c.c.) and a desensitizing dose of 5 c.c. given subcutaneously. Five hours later, from 80 to 100 c.c. were given intravenously.

PROPHYLACTIC IMMUNIZATION

In the course of the epidemic the War Department offered prophylactic immunization to the camp, and several thousand inoculations have been given. These are given only to volunteers, but all medical officers, nurses, orderlies and soldiers in good health are strongly advised to take it. The vaccine consists of 10,000 million of each of the three types I, II and III of the pneumococcus. The dead organisms are suspended in cottonseed oil, making thus a lipovaccine. One dose is administered. The advantage claimed for oil over saline is that the vaccine is more slowly absorbed and hence the period of "negative phase," with lowered resistance, is avoided. Our experience at this camp substantiates this claim. All reactions have been light.

Observations following the use of this vaccine at Camp Upton indicate not only successful immunization against pneumococci of Types I, II and III, but also a very low incidence of streptococcus cases among the vaccinated. The vaccine is given subcutaneously.

Pneumonia is the most serious complication, and if this can be avoided, influenza will be robbed of most of its terrors.

PATHOLOGY AND BACTERIOLOGY

The pathology of the cases of influenzal pneumonia coming to necropsy at Camp Dix have presented very diverse pictures. In the cases that we have seen at

necropsy the lesions were confined for the most part to the chest cavity. This is especially true of the cases which ran a rapidly fatal course. In the latter, the greater part of the visible pathologic changes consisted of very much congested and hemorrhagic, water-logged lungs. Some of the patients who had been in the hospital two weeks or longer presented a pathologic picture more or less like those bronchopneumonia patients coming to necropsy here last spring and those described by MacCallum for the pneumonia epidemic at Fort Sam Houston, Texas, during the winter of 1917-1918. Between these two extremes there have been many intermediate stages.

A notable feature of the cases in which death occurred early in the disease has been the extreme water-logged appearance of the lungs—lungs that are more or less completely filled and distended with a watery, bloody and frothy fluid, with petechial and larger hemorrhagic areas in the pleura. The right lung in one of our cases weighed just short of 4½ pounds and was absolutely devoid of air except for a small area at the apex of the upper lobe and small areas here and there along the anterior margin. The latter areas appeared to contain air under pressure. The remainder of the lung was tightly filled with fluid, was soft at all points, and did not contain any nodules or firmly consolidated areas. When the lung was held up, large quantities of fluid ran out. A slice cut from the lung lost about half its weight in fluid squeezed out by pressure with the hand. From this lung there was grown a nonhemolytic streptococcus and the influenza bacillus. Pronounced inflammation of the trachea and bronchi was noted in all cases in which death occurred early in the disease.

While only one case of well marked empyema has come to necropsy, several showed evidence of beginning empyema.

The heart showed nothing beyond dilatation of the right ventricle in the more acute cases. Early pericarditis has been seen in cases of longer duration.

The spleen as a rule showed no evident change.

The liver has weighed on the average approximately 2,000 gm. and has been more or less congested and yellowish.

The kidneys have shown a markedly congested and yellowish cortex.

The intestinal tract has shown in the majority of cases only slight congestion, and petechial hemorrhages in the gastric mucosa.

Blood examination in more than 700 cases has revealed in most instances an absence of leukocytosis in the more severe cases and during the acute stage of those running a more favorable course. The average has been about 5,000 white cells per cubic millimeter during the acute stage. The lowest recorded was 1,200.

The lymphocytes experienced a relative percentage increase. The red cell count has as a rule shown no decrease and frequently a high count during the acute stage. After two or three weeks in the hospital the picture changes in most of the serious cases. The red cell count decreases, sometimes to 1,600,000, and a leukocytosis develops ranging from 12,000 to 30,000 white cells, with polymorphonuclear leukocytes running as high as 95 per cent. So far as we have seen, the hemoglobin varies directly with the red cell count.

The urine in practically all seriously ill patients has shown a liberal amount of albumin with frequent casts.

BACTERIOLOGY

A large variety of organisms has been encountered in cultures and smears from the lung substance, from the bronchial mucous membrane and from the sputum. Streptococci and pneumococci have been most frequently found. The influenza bacillus (Pfeiffer's) has been encountered in sputum, bronchi and lungs, but we have made no particular effort to study it or to determine its frequency. It has, however, been encountered in the majority of cases when looked for. It has been recovered from the lung substance, from the bronchi, from the trachea and from the sputum, but in none of our large series (over 300) of blood cultures.

It is worthy of note that *Bacillus influenzae* has in no single instance been the sole invading organism. It has occurred, as stated, in the sputum and in secretions taken directly from the trachea and bronchi and from the lung, but it has never been in pure culture. It has been always associated with one or more pathogenic organisms. We have found it associated with *Micrococcus catharrhalis,* with the pneumococcus of various types, with *Streptococcus hemolyticus* or *viridans,* with pneumococci and streptococci, and in one or more of these combinations plus various other undetermined organisms. Of the latter class there have been observed; spirilla, gram-negative cocci and bacilli and frequently a pleomorphic gram-positive coccus. It would thus appear that, whatever rôle *Bacillus influenzae* plays in the present epidemic, it does not invade the blood and in all probability cannot solely be responsible for the fatal termination.

The sputum in more than 500 cases has been examined as to organisms and subjected to test for pneumococcus type by the white mouse necropsy method. The organisms mentioned above have been recovered, namely, pneumococci of various types, *Streptococcus viridans* and *hemolyticus, Micrococcus catharrhalis, Bacillus influenzae,* a gram-positive pleomorphic coccus, and gram-negative bacilli and cocci in the associations already noted. During the early phase of the epidemic when the pneumococcus was encountered, it as a rule failed to give any type reaction by either the precipitin or the agglutinin test. More recently Type III and to a less extent Type II pneumoccoci became more and more frequent.

Three hundred and fifty urines and 120 spinal fluids from seriously ill patients were subjected to the precipitin test. The results are comparable to those from the sputum examination, Types III and II became more frequent during the later phase of the epidemic. It would thus appear that neither pathologically nor bacteriologically are we dealing with a definite disease. There is a variety of conditions found at necropsy and a multiplicity of organisms in the various cases. The epidemic has, however, shown phases, the later of which tend to resemble the bronchopneumonia of streptococcus and pneumococcus origin.

CONCLUSIONS

We are of the opinion that the infection begins in the upper respiratory tract and is characterized by an intense exudative inflammation. A tracheitis and intense general bronchitis follow. The exudate in the severe cases is so thin and voluminous that neither coughing nor the ciliated epithelia suffice to throw it off. The lungs soon become water-logged. This exudate carries with it into the lungs the organisms ordinarily found in the nose, nasopharynx and throat,

namely, streptococcus, Type IV pneumococcus, *M. catarrhalis*, Pfeiffer's bacillus, etc. A confluent lobular pneumonia ensues, caused by one or more of these organisms. In other words, we consider this a type of aspiration pneumonia.

However, it is by no means certain that *Bacillus influenzae* of Pfeiffer is the original infecting organism. We have not found it in pure culture in any of our cases examined postmortem. The disease may eventually be shown to be caused by some filterable virus or ultramicroscopic organism.

LOBAR PNEUMONIA AT A BASE HOSPITAL

LABORATORY AND CLINICAL STUDY OF FIFTY CASES *

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Early in March, 1918, it was suggested by one of us (L. S. M.) that a more careful study be made on the lobar pneumonia cases that appeared at this camp. The chief of the medical service was therefore requested to continue Lieutenant Schiff on duty as ward surgeon in charge of the pneumonia wards. It was felt that a comparative study of the cases clinically could best be made if the same man were continued on duty.

This article is a report on two series of cases. In the first, thirty cases were followed up in a routine way. Polyvalent antipneumococcus serum was administered in each case without regard to the outcome of the type determination. The second series is a study of twenty cases in which more complete laboratory methods were done, such as blood cultures, daily leukocyte counts, type determination, and the use therapeutically of Type I serum only in those cases that were found to be due to the Type I pneumococcus.

TABLE 1.—FREQUENCY OF POSITIVE BLOOD CULTURES IN PNEUMONIA AND ITS PROGNOSTIC SIGNIFICANCE (SECOND SERIES)

Type	Cases Examined No.	Cases Examined Per Cent.	Blood Cultures: Positive No.	Blood Cultures: Positive Per Cent.	Blood Cultures: Negative No.	Blood Cultures: Negative Per Cent.	Mortality in Cases with Positive Blood Cul. No.	Mortality in Cases with Positive Blood Cul. Per Cent.	Mortality in Cases with Negative Blood Cul. No.	Mortality in Cases with Negative Blood Cul. Per Cent.
I	3	15	1	33	2	66	—	—	—	—
II	9	45	4	44	5	56	1	25	—	—
III	—	—	—	—	—	—	—	—	—	—
IV	8	40	3	38	5	63	1	33	—	—

PNEUMOCOCCUS SEPTICEMIA AND ITS PROGNOSTIC SIGNIFICANCE

The incidence of positive blood cultures in lobar pneumonia has been variously stated as ranging from 20 to 50 per cent. The findings at the Rockefeller Institute[1] were 30 per cent. Our findings, as will be seen in Table 1, are 40 per cent., thus distributed: Type I, 33 per cent; Type II, 44 per cent., and Type IV, 38 per cent. The two deaths that occurred were both among those with the positive blood findings, one in Type II and the other in Type IV. The mortality of those with positive blood findings according to this table is 20 per cent., as compared with no mortality in the negative cases.

The technic followed was to obtain about 20 c.c. of blood from a vein at the elbow under aseptic precautions; plant 10 c.c. of the blood in a bottle containing 80 c.c. of meat infusion broth, and from 2 to 3 c.c. in each of a tube containing plain agar melted and brought down to 45 C., and plated. The cultures were kept under observation for from five to seven days and examined daily before a definite negative report was made. The typing was done mostly by Avery's cultural method. Both the agglutination and precipitin tests (the routine method was the agglutination test) were done in a number of cases. The mouse method was not used, owing to the impossibility of obtaining white mice.

TABLE 2.—COMPLICATIONS AND MORTALITY *

Type	No. Cases 1st Series	No. Cases 2d Series	Empyema 1st Series	Empyema 2d Series	Otitis 1st Series	Otitis 2d Series	Died 1st Series	Died 2d Series	Recovered 1st Series	Recovered 2d Series
I	3	3	0	1	0	0	0	0	3	3
II	4	9	0	2	0	3	0	1	4	8
III	0	0	0	0	0	0	0	0	0	0
IV	11	8	0	1	1	0	0	1	11	7
Undetermined	12	0	0	0	0	0	0	0	12	0

* Comparison between Series 1, cases treated at random with polyvalent serum, and Series 2, those treated with Type I serum only when found due to Type I pneumococcus infection.

The pneumococcus obtained from the blood was in all cases found to correspond to the type obtained in the sputum.

The blood cultures were taken from two to nine days following the first initial symptoms, and in most cases from two to five days prior to the occurrence of the crisis.

It is significant that in the fifty cases here reported there was not a single case of Type III. It would be of interest to know whether the infection with this type of pneumococcus was as rare in other camps. In the thirty-one cases of lobar pneumonia reported by Cole and MacCallum[2] at Fort Sam Houston, Texas, they found only one case with Type III, or 3 per cent., as against 13 per cent. at the Rockefeller Institute.[1]

In a recent article by A. A. Small[3] in a report on the pneumonia cases at Camp Pike, the type determination findings were: Type I, 21 per cent.; Type II, 34 per cent.; Type IV, 45 per cent.—no Type III in the whole series. Our findings of those fifty cases that were typed were: Type I, 16 per cent.; Type II, 34 per cent.; Type IV, 50 per cent.—none of Type III in this series.

COMPARISON OF COMPLICATIONS AND MORTALITY BETWEEN THE TWO SERIES

In comparing the complications and mortality between the two series in Table 2, one cannot help but recognize the marked difference between them. One would expect the course of the disease to be much more severe and the mortality much higher in the first series of the thirty cases, which extended through the months of January, February and March, the coldest months of the year, as compared with the second series of cases, which extended through the last week of March, April and May, the wards and general treatment being the same and carried out by the same ward surgeon.

*From the Clinical and Pathological Laboratory, Base Hospital, Camp MacArthur, Waco, Texas.

1. Avery, Chickering, Cole and Dochez; Monographs of the Rockefeller Institute for Medical Research, No. 7, Oct. 16, 1917.

2. Cole, Rufus, and MacCallum, W. G.: Pneumonia at a Base Hospital, THE JOURNAL A. M. A., April 20, 1918, pp. 1146-1156.

3. Small, A. A.: Pneumonia at a Base Hospital, THE JOURNAL A. M. A., Aug. 31, 1918, pp. 700-702.

As a matter of fact, the course of the disease was much worse in the second series of twenty cases, which had in its favor the better weather conditions, having four empyema cases, three cases with otitis media, and two deaths; while in the first series of thirty cases there were no empyema cases, only one with otitis media, and not a single death. The only difference in the treatment between the two series was the use of the polyvalent antipneumococcus serum as a routine measure in the first series, while only in those that were of Type I infection, three cases out of the twenty, in the second series was serum given. The general impression as expressed by Major O. H. Campbell, chief of the medical service, was to the effect that the cases in which the polyvalent serum was administered ran a much milder course, the patients feeling better, breathing easier, and in every respect being much better off than those patients in the second series who did not receive serum, not having Type I infection.

The same impression was expressed by the various ward surgeons who observed the other cases that occurred in camp on whom polyvalent serum was used as a routine measure. Credit for the use of the polyvalent serum is due to Major Campbell, who instituted its use as a routine measure in all cases of pneumonia in the beginning, before we had any facilities in the hospital to do type determination. Because of the apparent good the polyvalent serum did and the easier course these cases ran and the low mortality obtained, the routine use of polyvalent serum was continued for a long time after the type determination was instituted in this laboratory.

SPECIFIC THERAPY: POLYVALENT VERSUS TYPE I SERUM

A critical analysis of Table 2, with special reference to the difference in complications and mortality between the first series, which received the polyvalent serum as a routine measure, and the second, which did not, is the strongest evidence, at least for the present, that we have in favor of using the polyvalent serum as a routine measure. We have no means of determining thus far the amount of antibodies Type IV organisms are capable of producing against their own respective types, while against Type II, according to the Rockefeller Institute,[1] an antiserum can be produced, though much less potent than against Type I. These facts, and the fact that Type II plus Type IV infections make up from 70 to 80 per cent. of the cases of lobar pneumonia that occurred in the camps, strongly suggest the advisability of using the polyvalent serum as a routine measure, until such time at least as monovalent serums can be produced against the respective individual types of infections. The potency against Type I infection of the polyvalent antiserum, as pointed out by Wayson and McCoy[4] of the U. S. Public Health Service, must in all respects compare favorably with that of Type I monovalent antiserum.

The important thing in the use of an antiserum as a routine measure is the avoidance of anaphylaxis. This may be accomplished by the intradermal and subcutaneous test. The technic as followed in this hospital is the administration intradermally, on the flexor surface of the upper arm, of 0.5 c.c. of a 1 per cent. antipneumococcus serum in sterile saline, controlled by 0.5 c.c. of saline solution introduced at points from 3 to 4 cm. apart on the same level of the skin, followed, if negative, in fifteen minutes by 1 c.c. of straight serum subcutaneously. If the subcutaneous test is found negative, it is followed one hour later by 50 c.c. of polyvalent serum intravenously. This dose is repeated from every twelve to twenty-four hours until the temperature, respiration and pulse warrant its discontinuation.

If properly carried out, this intradermal and subcutaneous skin test should do away with the objection raised against the routine use of the polyvalent antipneumococcus serum of unquestionable potency (as tested by the U. S. Public Health Service) in pneumonia due to pneumococcus infections of whatever type.

4. Wayson, N. E., and McCoy, G. W.: The Potency of Antipneumococcic Serum, THE JOURNAL A. M. A., June 8, 1918, pp. 1747-1749.

TOXIC GASES IN MODERN WARFARE

WITH SPECIAL REFERENCE TO DIAGNOSIS AND TREATMENT

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The idea of employing gases in warfare is, of course, not new. In 360 B. C., the time of the Trojans, resinous woods, sulphur and pitch were employed. Long ago the Chinese availed themselves of the so-called "stink-pots" to choke and nauseate their adversaries. The Turks used "Greek fire" against the crusaders. In more modern times we find General Joubert protesting to General White, during the Anglo-Boer War, because the bursting lyddite shells caused suffocation. In the latter instance the carbon monoxid poisoning was, of course, entirely incidental to combustion and not primarily a method of destruction.

Under the guise of studying industrial intoxications, the Hun had experimented extensively with chlorin, bromin, formaldehyd, nitrous vapor, sulphurous anhydrid, etc., long before the beginning of the present war. The knowledge and experience thus gained was first employed in warfare in April, 1915, when large quantities of cylinder gas were discharged against the Canadians and Turcos at Ypres with such ghastly effect.

Since that time various gases, either simply or in combination, have been employed, nearly all of them being based, so far as their production is concerned, on chlorin or methyl alcohol. Lately, arsenical compounds have also been used.

METHODS OF EMPLOYMENT

1. Cylinder, drift or cloud gas (generally chlorin or phosgen). The gas is discharged from large numbers of big cylinders, generally at night or in the early morning when a steady, properly directed wind, of from 4 to 12 miles an hour, is blowing. The gas is heavier than air, sinks into trenches, dugouts and shell holes, and is unaffected by mist, rain or water courses. Such attacks have been made on a 5-mile front and have produced intoxication at points 6 miles behind the line.

2. Artillery shells. Shells containing gas in a liquid state, and lately also explosive charges to insure dissemination are used for distant ranges. With fifty or more guns firing ten shots a minute, often in salvos,

it is quite possible to drench thoroughly a given area with gas, especially if the ground is low or wooded. Such shelling is now much in vogue previous to an infantry attack, and is often directed against artillery positions.

3. Mortars (short range projectors, "minenwerfer"). By this method enormous gas shells can be projected for 2,000 yards. A large number of mortars are fired simultaneously, by an electric device, and thus a tremendous concentration of gas may be attained in a given locality, practically without warning. After such attacks, 40 per cent. of casualties with 15 per cent. of fatalities are not uncommon. When one reflects that an 8-inch shell contains 2½ gallons of volatile liquid, it is not difficult to understand why this should be so.

4. Hand grenades. Grenades containing lacrimatory, combustible or lethal gas are occasionally employed to "clean out" saps and dugouts.

The effects of gas depends on: (1) the kind used, and the concentration obtained; (2) the duration of the exposure, and (3) the promptness and efficiency of protective measures, such as gas alarms and respirators. It should be borne in mind that symptoms may be delayed, sometimes for hours, in certain types of gases.

THE DIFFERENT TYPES OF GASES

1. Lacrimators (acetone, xylene or benzene bromid). These gases act immediately, causing a copious ocular irritation, intense lacrimation and thus a temporary, indirect functional blindness. They are commonly employed in gas chambers for purposes of instruction, and to test out the "fit" of a mask.

2. Sternutators (diphenylchlorarsin). The symptoms produced by this type of gas are immediate sneezing, coughing, headache, salivation, vomiting and substernal pain. They are employed preliminary to or early in a gas attack so as to render gas mask protection difficult or impossible. A man who is seized with the above mentioned symptoms generally finds it impossible to get or keep his mask on, and hence falls a victim to the lethal gas that accompanies or follows the initial dose.

3. Lung irritants (suffocating gases—chlorin, phosgen, diphosgen, oxychlorcarbon). These gases produce death by irritation of the pulmonary alveoli, resulting in edema of the lungs.

4. Vesicants (dichlorethylsulphid, dichlormethylether). The brunt of the attack is borne by the skin, eyes and upper respiratory tract. Blistering and subsequent sloughing of the tissues affected results in cutaneous burns and intense bronchial, tracheal and laryngeal inflammation, and sloughing. Death results from bronchopneumonia.

5. Gases destroying erythrocytic function. (*a*) Carbon monoxid—causing death by asphyxia resulting from methemoglobinemia.

(*b*) Arsin—causing hemolysis, jaundice, hemoglobinemia, nephritis and gastro-intestinal disturbances.

SPECIAL TYPES OR VARIETIES OF GAS

Diphosgen (trimethylchloroforminate, "surpalite"), —This gas, now used instead of phosgen ("palite"), is the most intense lung irritant known. In a dilution of 1:50 (rare) one inhalation kills by laryngeal spasm. It diffuses quickly, and in a dilution of 1:1,000,000 is toxic if breathed for a considerable time. When brought into contact with water it forms hydrochloric acid. It produces but little local or early irritation, and during periods of excitement or when mixed with smoke, may be breathed for some time without discomfort. It does, however, cause slight, early, ocular smarting, nausea, retching and vomiting (pharyngeal irritation). Its chief and important action, however, is on the pulmonary alveoli, and its effect is pulmonary edema.

Symptoms: These are slight cough, nausea, substernal pain, soreness or sense of constriction, headache, epigastric pain, dyspnea, fever from 100 to 106, syncope and weakness.

Slightly gassed cases are difficult to diagnosticate. The symptoms may be slight and physical signs absent. It is safe to assume that a man who shows no physical signs at the end of from twenty-four to thirty-six hours either has not been gassed or, if so, only to a negligible degree.

The severe cases fall into one of two categories: (*a*) cyanotic cases: increasing restlessness, dyspnea, weakness and cough with slight frothy, sometimes blood-tinged, expectoration; dyspnea, cyanosis, venous distention and a full, strong pulse of about 100; or (*b*) gray cases: slight cough, no expectoration, ashen pallor, marked tachypnea, shallow respiration, a leaky skin, very low blood pressure, a rapid, thready pulse (140) and collapse. Needless to say, the prognosis in the latter case is far worse than in the former.

Physical Signs: In the early stages there may be no auscultatory signs—simply an increase of the respiratory rate and an increased fulness of the pulse. Later the signs of beginning pulmonary edema manifest themselves—crackling râles, harsh breath sounds, not infrequently together with pleural frictions. It is noteworthy and striking that such physical findings are first noted, most marked, and, during convalescence, most persistent, over the upper lobes anteriorly, and not, as is the case in disease, at the bases. Local tympany may be found, resulting from emphysematous areas. As the edema increases, resonance becomes impaired and breath sounds are lost, being totally replaced by crackling râles or completely silent areas. The heart dulness increases to the right, and as dilatation increases, the pulmonic second sound becomes enfeebled. Death results from deficient oxygenation due to cardiac dilatation, following pulmonary engorgement and edema. It is mechanical, therefore, there being no direct cardiotoxic effect. Occasionally symptoms and physical signs may be precipitated by physical exertion or a full meal, several hours after the exposure to gas, the patient collapsing quite suddenly.

Morbid Anatomy: The trachea and bronchi are filled with slightly blood-tinged froth. The lungs outwardly appear mottled as a result of alternating areas of congestion and emphysema. On section, congestion, capillary hemorrhages and extreme, widespread edema are found. Small, slightly bloody, pleural effusions are quite common. The right heart is dilated and often contains thrombi. The venous system is engorged, and thromboses are sometimes encountered. The kidneys are congested, and the glomeruli may contain clots.

Four fifths of all the deaths occur within the first twenty-four hours. If the patient can be tided over this interval he usually recovers. The pulmonary edema clears up rapidly after the second or third day. Cardiac dilatation may persist and be troublesome for several weeks.

Treatment: This consists of: (1) absolute rest; (2) warmth (to prevent shivering, which increases carbon dioxid); (3) venesection; (4) removal of clothing; (5) oxygen inhalations (in the cyanotic cases); (6) cardiac stimulation (camphor, digitalin, spartein, caffein), and (7) fresh air.

Venesection is the sheet anchor of treatment. About 500 c.c. of blood should be removed as soon as evidences of pulmonary edema begin to appear. This may have to be repeated within a few hours. The beneficial effects, both subjective and objective, are immediate and striking. A good-sized vein must be freely opened or a portion of its wall excised, since the blood is inspissated, clots quickly and flows with difficulty. Most observers believe that in cases belonging to the ashen gray type the patients should not be bled.

Contraindications in Treatment: Opium in any form, ipecac, emetin, expectorants or depressants, such as acetylsalicylic acid or other coal tar derivatives, are contraindicated. Opium tends to check cough, and hence the patient drowns in his own secretions sooner than he otherwise would.

Atropin produces no beneficial results; neither does epinephrin. It should be remembered that recovery may occur in the most desperate cases; active treatment should be kept up as long as the patient breathes. Raising the foot of the bed sometimes aids expectoration.

Practical Considerations: Gassed patients usually arrive in large numbers and tend to swamp the personnel of the field hospital; hence to save time and labor the following arrangements should be made:

1. Serious cases should be kept in one or two wards, and not scattered at random. Thus both observation and treatment will be facilitated.

2. One officer is detailed to see all incoming cases, to judge of their severity and order their disposition. He should circulate constantly through the wards so as to pick out cases with beginning edema.

3. One officer and one or two orderlies are assigned to perform venesection in the severe cases. More may be required.

4. One officer should supervise the oxygen administration and the giving of hypodermic stimulation. Oxygen is given for five or ten minutes, with ten or fifteen minute intervals, according to the degree of cyanosis present.

All diphosgen patients must be transported by litter. They are not allowed to undress or bathe themselves. Light food in small quantities is allowed in the milder cases. In the severe cases the patients are kept at the field hospital for several days until acute symptoms have subsided. It the evacuation hospital it is usually possible at the end of a few days to pick out the patients who will soon be fit for duty from those requiring evacuation to the base. Convalescence will be more prolonged and must be more guarded than in the case of yperite ("mustard gas").

Chlorin.—The treatment of chlorin poisoning is similar in all respects to that of diphosgen, except that ammonia inhalations may be added.

Dichlorethylsulphid (yperite, "mustard gas").—This gas has a faint odor which has been compared to French mustard, vinegar, etc. Characteristically, it produces no immediate or early effects. One may remain or sleep in a dugout charged with it for several hours before becoming conscious of its presence, and then it is often too late.

Occasionally nausea, retching, vomiting, and smarting of the eyes occur as valuable, even life-saving, symptoms at the end of from twenty to sixty minutes. As a rule, however, symptoms appear from two to five hours after the beginning of exposure.

The face and neck become red and the eyelids swollen. There is marked photophobia and blepharospasm, lacrimation, ocular and substernal and epigastric pain, pharyngitis, bronchitis, and an increased pulse and respiratory rate. At the end of twenty-four hours, severely gassed patients show in addition to an exaggeration of the symptoms just mentioned, cutaneous blistering of the face, neck, scrotum, inner surface of thighs, penis, buttocks, etc. Burns in the latter region are especially common after sitting on gas-impregnated earth. Widespread and severe purulent inflammation of all the upper mucosae and the bronchi are present. The expectoration consists of bloody pus and is sometimes accompanied by sloughs of the entire tracheal and bronchial mucous membrane.

At the end of forty-eight hours, bronchopneumonia, often widespread and coalescing, has occurred, as a result of tissue destruction and leukopenia. The patient is delirious, coughs, is cyanotic, exhausted, tortured by pain and suffocation, and finally lapses into unconsciousness. It is to be noted that in contrast to the phosgen cases, dyspnea, cyanosis, fever, tachycardia and prostration occur late. Practically none of the patients die within thirty-six hours, and death may occur weeks later. Slight transient albuminuria is quite common.

Convalescence: Photophobia of a functional type and unexplained origin persists for weeks and should be ignored as soon as local inflammatory changes have subsided. Bronchitis may also last for weeks, together with substernal and epigastric pain. None of these symptoms should prevent a man's being sent to the convalescent depot if his general physical condition warrants it. Some of the cases develop E. S. (effort syndrome), and require special treatment in "heart classes." Severely gassed patients—those that have developed a demonstrable bronchopneumonia—usually die. The slightly gassed patients usually recover. There is doubtless a middle class in which bronchiectasis develops in time as a result of cicatricial changes; but so far as is known, true tuberculosis as a sequel does not occur. It is, of course, easy to conceive that latent lesions may be activated by gassing.

Morbid Anatomy: There are purulent inflammation, destruction and sloughing of the respiratory mucosae. The lungs show alternating areas of congestion, emphysema and bronchopneumonia. The small bronchi and bronchioles are filled with pus. Sometimes coalescing areas of bronchopneumonia may produce extensive lobar involvement. Small areas of pulmonary edema may exist. The stomach, chiefly near the cardia, as well as the duodenum, generally contains submucous hemorrhages, conditions apparently resulting from the swallowing of saliva and responsible for the epigastric pain and gastro-intestinal symptoms. The kidneys are usually congested. Death results from bronchopneumonia and asphyxia due to obstruction of the smaller bronchi and bronchioles by mucosal sloughs and pus.

Treatment: 1. The patient should be evacuated early; as soon as possible, all clothes should be removed

and the entire body washed with soap and water. (Yperite is freely soluble in animal and vegetable fats.) The hair, which retains the gas, should be clipped. The room must be well ventilated, the clothes thrown outdoors, and the attendants must wear gloves.

2. The eyes, nose and mouth should be douched with 1 per cent sodium bicarbonate solution. This should be followed by the instillation of a bland oil. If obtainable, 0.5 per cent. dichloramin-T dissolved in chlorcosane should be used for the eyes (1 drop in 3, each eye, thrice daily as suggested by Major J. E. Sweet). Dichloramin-T has a twofold purpose: (*a*) It is a chemical antidote, by virtue of its chlorin. (*b*) It is an antiseptic.

3. Skin burns are treated with any alkaline dusting powder (talc, magnesium carbonate, zinc oxid), or by oily dressings such as petrolatum or paraffin. They are not as painful as fire burns, presumably owing to the edema and degeneration of the nerve endings (Warthin and Weller). Blisters should be pricked, but their fluid should not be allowed to run over neighboring skin areas.

DIFFERENTIAL DIAGNOSIS AND TREATMENT

Yperite (mustard gas):	Diphosgen (also phosgen and chlorin):
Late symptoms; death from three to sixty days after exposure.	Early symptoms, death from one minute to forty-eight hours after exposure.
Skin burns, conjunctivitis, bronchitis, bronchopneumonia.	No skin burns nor conjunctivitis; dyspnea, cyanosis, edema of lungs.
Late fever, weakness, dyspnea and tachycardia.	Early fever, weakness and tachycardia.
Remove clothes, wash with *soap*, cut hair, treat eyes and skin burns.	Absolute rest, *venesection*, oxygen and cardiac stimulants.
Codein or morphin indicated for severe cough.	Codein and morphin contraindicated.
After-effects: photophobia, bronchitis, aphonia.	After-effects: weakness and cardiac dilatation.

4. Cough is treated with steam inhalations (benzoin), codein or morphin; and, unless the skin is already blistered, by counterirritation of the chest (mustard).

Eye shades should be provided, or light bandages applied. The latter must not prevent the free escape of discharges. Eye pain is relieved by forcing open the lids from time to time, and allowing the imprisoned secretions to escape. Cocain must not be used on account of its deleterious effect on the cornea. The ensuing purulent conjunctivitis, and occasional corneal ulceration, are treated by customary methods. The eyes rarely suffer permanent damage. Patients who have developed bronchopneumonia should be screened, to prevent, if possible, the infection of others. Oxygen inhalations are useful as a method of alleviation in severe cases, but they are not life saving as in the case of diphosgen, etc.

Clothing permeated with yperite if unaired remains poisonous for weeks. The gas can best be removed by passing the clothing through a steam sterilizer (thirty minutes wet steam, fifteen minutes dry steam, fifteen minutes air). If no sterilizer is available, they should be sunned and aired until they can be steamed.

Slightly gassed patients, of whom there are usually large numbers, may be allowed to walk to the shower baths and wash themselves. Physical exertion does not entail danger in any way comparable to that which exists after exposure to the phosgen group of gases.

Much diagnostic assistance may be gained by nonsuggestive questioning of the more intelligent and not too greatly prostrated patients. The patient should tell his own tale in regard to odors, irritation, nausea, vomiting, sneezing, cough or weakness. Early sneezing and headache point to sternutants or arsin; early cough, vomiting and weakness to phosgen; late conjunctivitis, nausea and cough, to yperite. Prognosis should never be discussed in the hearing of patients: psychoneuroses are too easily developed.

Ethyldichlorarsin.—This gas and others containing arsenic are now increasingly used. Lately a shell containing 50 per cent. dichlormethylether and 50 per cent. ethyldichlorarsin has been employed. Aside from early sneezing, it produces a condition practically identical with yperite except for the fact that its action is much more rapid. It is said that the arsenical gases, in addition to the other symptoms, produce somnolence, nephritis (edema of the hands and face), abdominal cramps, diarrhea and hemolytic jaundice. I have not as yet seen any such cases.

Carbon Monoxid.—This gas, which results from the combustion of high explosives, produces similar, though less intense, symptoms than the illuminating gas poisoning of civil life. Thus we find headache, asthenia, amnesia, delirium and syncope; symptoms which result from methemoglobinemia. Such cases are sometimes evacuated as "shock."

Treatment: This consists of rest, oxygen, stimulation and transfusion. Bleeding is, of course, contraindicated.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

ANTIRABIC VACCINE (See N. N. R., 1918, p. 324).

Dr. D. L. Harris' Laboratory, St. Louis (National Pathological Laboratories, Chicago).

Rabies Vaccine (Harris).—Brains and spinal cords of rabbits, dead of fixed virus rabies infection, are ground to a paste which is frozen in a container surrounded with carbon dioxide snow. The mass is pulverized and rapidly dried *in vacuo*. The resulting dry powder is standardized by the method devised by Dr. Harris, and stored *in vacuo* in the cold. One dose is given daily over a period of ten days or more, the early doses increasing in unitage up to a maximum. Each package contains vaccine and apparatus for the administration of one complete treatment, consisting of 10 tubes of rabies vaccine (Harris), sealed in a vacuum, and numbered consecutively; 10 vials containing sodium chloride solution for preparing the vaccine solution; and a Lüer syringe with needle.

Drug Cultivation in Madras.—According to U. S. Consul Lucien Memminger at Madras, India, experiments are being made in the cultivation of a number of drug plants on the Nilgiri plantations. Among them are jalap, ipecacuanha, belladonna, foxglove, henbane, common mint, fennel and rosemary, as well as lobelia inflata and chenopodium. Jalap has been raised for a number of years. On account of its high price during the war efforts have been made with some success to increase the production on the government cinchona plantations and in botanic gardens. It has been found that the plant can be propagated from cuttings from the young stems as well as from the tubers, which latter is the usual method. In Ootacamund an acre of jalap yields about 5,000 pounds of green tubers, or about 1,000 pounds of powder.

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SATURDAY, NOVEMBER 30, 1918

THE NONIDENTITY OF ANTINEURITIC AND ANTISCORBUTIC FACTORS IN NUTRITION

When the investigations that resulted in the demonstration that beriberi is truly a disease due to dietary deficiency established the vitamin hypothesis, an impetus was at once given to the consideration of other conditions of malnutrition from the same general standpoint. Before long, scurvy, rickets, pellagra and other maladies were put into the category of dietary deficiency diseases. As the polishings of rice had been clearly demonstrated to contain a substance—a vitamin—which will prevent the onset of beriberi or cure its symptoms when once they have made their appearance, a multiplicity of specific vitamins was at once postulated, each involved in a definite disease. In rickets, and particularly in scurvy, the probability that a dietetic factor is concerned has long been recognized; and in many instances improvement or cure has followed the institution of changes in the regimen of the patients. The specificity of the dietary deficiency diseases lent probability to the existence of specific deficiencies and consequently to the existence of a multiplicity of essential vitamins.

Meanwhile the need has been demonstrated of at least two types of vitamins in addition to the familiar nutrients, if physiologic well-being is to be attained. Investigations[1] are tending to demonstrate that certain properties of the water-soluble food accessory are similar to those associated with the so-called antineuritic vitamin which prevents the onset of beriberi and cures experimental polyneuritis. In fact, the suggestion has already been advanced that they are identical. Hence the question at once suggests itself as to whether the other alleged vitamins are identical, rather than specific—in other words, whether the belief in a diversity of nutrition-promoting substances should be abandoned.

For at least two of these vitamin-like factors in nutrition, the answer to this query is a negative one. It has long been known that many plants and fruit juices are capable of preventing and curing scurvy, that is, they contain an antiscorbutic substance. The information as to the chemical and physical properties of the latter has been exceedingly meager—far more so than in the case of the antineuritic vitamin studied by Funk and others.[2] A recent investigation[3] at the Lister Institute, London, has led Harden and Zilva to the definite conclusion that the antiscorbutic property is not identical with the antineuritic factor, since substances showing marked antineuritic activity are antiscorbutically inactive, and vice versa. There is also evidence that the antiscorbutic substance is more thermolabile than the antineuritic. The latest experiments show that, under certain conditions at least, the antineuritic substance behaves quite differently from the other toward adsorbents. If a mixture is made of autolyzed yeast—containing antineuritic vitamin—and orange juice, a recognized antiscorbutic, fullers' earth will remove the antineuritic factor while the other property remains unaltered. Common adsorbents like fullers' earth and colloidal ferric hydroxid do not appreciably affect the antiscorbutic potency of orange juice, which, furthermore, can even be filtered through porcelain without having its activity vitiated to any appreciable extent. The nonidentity of the curative agents for two diseases associated with faulty nutrition raises the question whether each malady is actually due to an avitaminosis or lack of suitable vitamin in the diet—a recently debated problem.

1. McCollum, E. V., and Kennedy, C.: Jour. Biol. Chem., 1916, **24**, 491. Drummond, J. C.: Biochem. Jour., 1917, **11**, 255.

2. Vitamins and Metabolism, editorial, The Journal A. M. A., Nov. 16, 1918, p. 1662.

3. Harden, A., and Zilva, S. S.: The Differential Behavior of the Antineuritic and Antiscorbutic Factors Toward Adsorbents, Biochem. Jour., 1918, **12**, 93.

THYROID FUNCTIONS AND THERAPY

There can be little doubt that some, at least, of the so-called endocrine glands play an important part in metabolism. An attempt at present, however, to discover their precise function on the basis of dependable facts is more than likely to lead into a maze of conflicting hypotheses, some of which will not bear even superficial scrutiny. Endocrinology, to borrow a pretentious designation, still remains in good part a collection of guesses enriched and in some cases confused by clinical experiences. It will be imperative to prepare a far more substantial foundation for these new aspects of physiology and pathology before the therapy of the subject can be put on a rational basis. Lately several substantial contributions in the direction of progress have been made. Carefully conducted experiments on thyroidectomized animals in which precautions were taken to leave the parathyroid glands functionally intact have shown that, following the abolition of thyroid function, there ensues an unmistakable hypoglycemia and also a tendency to delayed removal of glucose from the blood, that is, a delayed

blood sugar tolerance curve.[1] An explanation is thus afforded for the low blood sugar values observed in myxedema and cretinism. Since hypoglycemia has been reported in Addison's disease, pituitary disorders and other less clearly defined endocrine conditions, such as muscular dystrophy,[2] it has been suggested that this symptom is evidence of hypofunction of the endocrine glands, the thyroid being taken as an example.[3] It seems likely, therefore, that as the thyroid evidently functions to maintain the blood sugar at its normal level, there is a very intimate relation between the gland and carbohydrate metabolism.

With respect to nitrogenous metabolism, it has long been known that administration of thyroid preparations may stimulate the disintegration of tissue. In an attempt to trace the specific effect thus recorded to definite metabolic factors, Janney and Isaacson[4] have studied the partition of nitrogen in the urine both in hypothyroidal conditions and after experimental hyperthyroidism. For the latter purpose Kendall's thyroid hormone was administered. No selective action of the thyroid on urea and ammonia could be observed; their percentages remained within normal limits. The creatinin metabolism also appeared to be independent of thyroid influence. The purin metabolism alone seemed to be altered, the output being decreased in hypothyroid function and increased in hyperthyroid conditions. In a special series of investigations at the Montefiore Home and Hospital, New York,[5] it was found that the nitrogen balance is a rather delicate measure of the action of thyroid products. Contrary to widely held assumptions, a gain rather than a loss of nitrogen is a result of the therapeutic action of the thyroid; whereas a loss of nitrogen, that is, of protein, is due to the toxic action of the gland.

If it proves to be correct that nitrogen loss following thyroid medication is a toxic manifestation —a sign of overdosage or hyperthyroidism—a fact of unique importance will have been acquired. Janney fortifies his belief by reminding us that abolition of thyroid function in the very young leads to stunted growth (cretinism). Proper thyroid medication causes growth to be resumed. The therapeutic action of the thyroid should therefore be found to be accompanied by a gain, not a loss, of nitrogen. Accordingly, small doses of thyroid which suffice to cause clinical improvement in a cretin have actually been attended by an increased retention of nitrogen in the body. According to Janney's interpretation, the depressed nitrogen excretion in cretinism is not due to "absence of stimulatory effect," but rather to the failure of normal repair and growth processes controlled by the thyroid. As these constructive processes are inhibited, little food is taken, because more cannot be assimilated. A low nitrogen output results.

That the metabolism is depressed in cretinism has long been recognized. Janney's studies indicate that this cannot be due to decreased alimentary absorption of food attributable to intestinal sluggishness. The adiposity sometimes observed may be due to the altered assimilability of sugar, since disturbances of carbohydrate metabolism have now been demonstrated to attend hypothyroid conditions. With these newer points of view, the problems of therapy and dosage can be considered to better advantage.

1. Janney, N. W., and Isaacson, V. I.: The Blood Sugar in Thyroid and Other Endocrine Diseases: The Significance of Hypoglycemia and the Delayed Blood Sugar Curve, Arch. Int. Med., August, 1918, p. 160.
2. The Origin of Progressive Muscular Dystrophy, editorial, THE JOURNAL A. M. A., May 11, 1918, p. 1376.
3. Hamman, Louis, and Hirschman, I. I.: Studies on Blood Sugar, Arch. Int. Med., November, 1917, p. 761.
4. Janney, N. W., and Isaacson, V. I.: The Influence of Thyroidectomy and Thyroid Diseases on Protein Metabolites, Arch. Int. Med., August, 1918, p. 174.
5. Janney, N. W.: Studies in Thyroid Therapy: The Effects of the Thyroid Hormone as Determined by a Clinical, Metabolic and Dietetic Investigation: New Points of View on Thyroid Function in Health and Disease, Arch. Int. Med., August, 1918, p. 187.

THE ILLINOIS EXPERIMENT IN REGULATING MEDICAL PRACTICE

Seventeen months have elapsed since the new arrangement became effective for regulating the practice of medicine in Illinois under the Consolidation Law. As already outlined in THE JOURNAL,[1] the registration of physicians, together with the licensing of dentists, pharmacists, midwives, followers of various cults and other registrable occupations, were together placed in a single department headed by an official who had authority to select advisers in the registration of each of the professions and occupations concerned. This arrangement in Illinois is an experiment, since it has no parallel in the methods adopted in other states. The arrangement places in a single department the control of all forms of healing, and the director of the department is in position to require, without discrimination, reasonable educational qualifications of all who are to practice regardless of the "system" or method of treatment employed. The success of any law depends, of course, on the ability and integrity of those appointed to enforce it. That the new law in Illinois is in proper hands is evident from the energetic prosecution of medical crooks and illegal practitioners since July 1, 1917, and in the establishing of better conditions in medical schools. The article by Mr. Francis W. Shepardson, director of the Department of Registration and Education of the State of Illinois, which was published two weeks ago,[2] therefore deserves careful reading. Mr. Shepardson and his co-workers entered on their duties with little or no knowledge of the irregularities of quacks, crooks and charlatans, who have always preyed on the sick and the injured. These irregularities, however, have been and are well known to the better class of physicians, who from time immemorial have struggled to uphold the

1. The Illinois Consolidation Bill Becomes a Law, THE JOURNAL A. M. A., March 17, 1917, p. 869.
2. Shepardson, F. W.: A Registration Fee for Physicians, THE JOURNAL A. M. A., Nov. 16, 1918, p. 1629.

dignity and honor of the medical profession—although Mr. Shepardson in his article apparently has not appreciated this fact. The article is written with the vividness usual to a layman who has suddenly had his eyes opened to the seriousness of the conditions disclosed. As he states:

> They found an army of advertising charlatans, some with fixed offices and others appearing "for one day only," making extravagant claims of curative skill in handling all diseases, specialists in everything, blatant fakers, robbing the poor and the ignorant, preying on the superstitions of gullible foreigners, as bold and daring bandits as ever sandbagged a lone wayfarer at night.

The irregularities found, however, were not only of those who because they hold degrees in medicine are physicians, but who prefer to resort to quackery; the description includes, also, the hordes of those representing the endless variety of cults, fads and isms, who skulk in the shadow of the medical profession, but who excuse their failure to secure the educational qualifications required of physicians by the claim that they are "not practicing medicine." As Mr. Shepardson further states:

> They found a motley array of so-called "doctors" of every name and cult under the sun: regulars, homeopaths, eclectics, osteopaths, chiropractors, naprapaths, spondylotherapaths, mechanotherapaths, suggestive therapaths, psycotherapaths, naturotherapaths, iridologists, magnetic healers, religious healers, and many other varieties, the list forcibly reminding one of the description which Masson gives in his "Life of Milton" of the sects which flourished in England in the poet's time. After naming a great many, he includes in a sweeping classification the remainder of the some hundred-odd varieties of "fluent, rancorous, inquisitorial and on the whole nasty kinds of Christians."

This article is especially interesting because it turns the strong light of publicity on the quacks, cultists and pretenders who for ages have thrown discredit on the practice of medicine. It is well known to medical men that the conditions disclosed in Illinois are not limited to that state. A similar investigation would show affairs equally as bad or worse in other states. Only a few states have provided for regulating all forms of the practice of the healing art by a single department. On the other hand, as previously shown in The Journal,[3] the authority over the various forms of healing has been divided in several states (Arkansas, for example) among as many as six different and independent boards—a situation which allows faddists, quacks, medical crooks and charlatans to prey at will on the credulity of people who are rendered still more unwary in times of worry, sickness and distress. Mr. Shepardson's disclosures tend to show what is the next great reform movement needed in this country, namely, the conducting of a thorough investigation by a disinterested but competent committee of educators of the conditions underlying the practice of medicine in the United States, similar to that conducted by Mr. Justice Hodgins in Ontario two years ago. All the publicity possible should be given to the conditions found. The medical profession as a whole has nothing to fear from it and would undoubtedly favor such a house cleaning. It is only the quacks, crooks and fakers who prefer to skulk in the darkness and who, like rats, will try to hide when the light is turned on. The medical profession has striven for years to clear out these offenders, but the public has either remained indifferent or has unknowingly sided with the pretenders. The efforts of the profession have frequently been misinterpreted as being made in its own interests, and the cultists and quacks have claimed that they were being "persecuted by the medical trust," etc. It is evident, therefore, that the most effective investigation would be by an educational agency representing the public and independent of the medical profession. It is clear also that in each state the licensing of those who are to treat the sick should be in charge of a single board of disinterested but competent lay educators who, as in Illinois, are authorized to select an advisory board of physicians to aid in enforcing the practice laws. Finally, such educational qualifications should be required as will insure that those licensed shall have a knowledge of the normal functions of the human body and their reactions to injury and disease.

3. Medical Licensure in the United States, Current Comment, The Journal A. M. A., Nov. 4, 1916, p. 1377.

DOES BEER CONTAIN VITAMINS?

In the final appeals of the advocates of beer for a hearing in defense of their claims, considerable emphasis has been given to the nutrient properties of the brewed malt beverages. As cereals form the basis for the production of beer, the advertising specialist has hit on the clever device of calling this fluid "liquid bread." No cogent reason is given, however, why one should depart from the time honored custom of consuming bread prepared in the more substantial form of a nonalcoholic loaf.

The discovery that the dietetic value of a food product cannot be determined solely by reference to its calorific value or its content of long recognized nutrients has introduced new criteria into the study of nutrition. With the recognition of "quality" distinctions in proteins and the existence of vitamins has come the need of investigation from new and more numerous standards. It has become evident that articles intended for the dietary should be examined and evaluated not only for the usual ingredients, but also for the accessory factors which may add to their dietary significance.

The beer enthusiasts have been quick to grasp the situation. Barley[1] and yeast, both of which are involved in the manufacture of beer, are recognized sources of

1. Steenbock, H.; Kent, Hazel E., and Gross, E. G.: The Dietary Qualities of Barley, Jour. Biol. Chem., 1918, **35**, 61. Barley as a War Time Substitute for Wheat, editorial, The Journal A. M. A., Sept. 7, 1918, p. 828.

nutrition-promoting vitamin. It is true that the barley is germinated and heated to produce malt prior to the brewing process. The conjecture that vitamins may be present in beer is therefore not an unreasonable one. However, the popular alcoholic beverage is meeting its Waterloo on all sides. An investigation made by Harden and Zilva[2] to test the subject by the physiologic methods now available has given a clear-cut answer. Their conclusion is that bottled ale and stout, and fined beer as brought to the market, are lacking both in the antineuritic and antiscorbutic accessory factors, and kilned malt is also wanting in these two principles. It is an interesting commentary on the alcoholic aspects of the subject that in testing for the antineuritic factor by attempting to cure polyneuritic pigeons it was necessary to remove the alcohol from the beer, lest this component might induce the very disease which the postulated beer vitamin was expected to relieve or avert.

The truth is the same today as it has been for decades. Beer is not chiefly appreciated on account of the nutritious value of its ingredients, nor on account of the by-products of the brewing industry which may help to produce milk and meat. Beer and alcohol still go together; and the claims of alcohol for respectful consideration have been duly considered and found wanting.

Current Comment

THE ANTIQUITY OF DISEASE

The development of a new subdivision of science, paleopathology, which aims to interpret the pathologic conditions discovered among the fossil remains of ancient geologic times, is likely to throw new light on the antiquity of disease. Existing evidences already relegate its beginnings back as far as the carboniferous or great coal period. We may be certain, particularly as the result of the investigations of French scientists, that fungi and bacteria existed in this early period, although the presence of such micro-organisms does not constitute a convincing proof of their pathogenicity. According to Moodie,[3] who has reviewed much of the work in this field of study, the great Permian period, with its widespread development of curious reptilian forms, has furnished us with the first evidences of traumatic conditions as they prevailed among the early forms of life. Fractures may have occurred earlier than the Permian, but they have not yet been seen. Some of the uncovered fossil vertebrates have been described as exhibiting opisthotonos or spastic distress.[4] In other instances, necrosis of the bones has been postulated. Even such specific lesions as are represented by hemangiomas have been detected by microscopic study of the fossil remains of the great dinosaurs. Osteomas and other osseous defects are also known to have occurred. Dental caries is certainly not a novelty of modern ages. Moodie points out that no new ideas of pathology have beeen revealed by the study of the ancient lesions; but, he adds further, none were to be expected, since the organization of the animal forms of ancient times presumably differed only in minor details from the structures of the present geologic age. The presence of lesions suggests definite causes for their origin. Whether they represent extinct diseases or still existent etiologic factors remains to be ascertained as part of the development of the newly formulated science.

2. Harden, A., and Zilva, S. S.: An Investigation of Beer for Antineuritic and Antiscorbutic Potency, Jour. Institute of Brewing, 1918, 24, 197.

3. Moodie, R. L.: Studies in Paleopathology, I, General Consideration of the Pathological Conditions Found Among Fossil Animals, Ann. Med. History, 1918, 1, No. 4; Paleontological Evidences of the Antiquity of Disease, Scient. Month., 1918, 7, 265.

4. Moodie, R. L.: Studies in Paleopathology, III, Opisthotonos and Allied Phenomena Among Fossil Vertebrates, Am. Naturalist, 1918, 51, No. 617.

INDUSTRIAL MEDICINE IN THE PLACEMENT OF RETURNED SOLDIERS

As America entered the war, industry faced the tremendous problem of releasing millions of workmen, and, at the same time, maintaining or increasing production. Now that the war is over, it faces the no less difficult problem of assimilating the returned and disabled soldiers without seriously affecting production and labor conditions. Wisdom calls for the safe and efficient utilization of all workers, and it should guide the redistribution in industry of our returned soldiers. Most employers will welcome back those who left their jobs to enter the Army or Navy. Patriotism, fairness, generosity or whatever be the motive, the fact remains that scientific placement of these returned soldiers will be a wiser policy than their indiscriminate employment even in the industries from which they came. Eventually, the returned soldier, be he physically fit or physically disabled, will have to compete with his fellows for employment and wages on the basis of efficiency. Industry will be forced to use these men as it will have to use all workers—where they can be most productive. The returned soldiers in the aggregate will come back in better physical condition than when they left employment. Many of them will know what physical defects they possess and something of their significance. They will know that they can adapt themselves to new conditions of life and work. It will be for the good of all if industry, in reassimilating these men, capitalizes these changed conditions of body and mind by placement in the light of physical qualifications. Herein lies a great opportunity for the industrial physician and surgeon. He can carry over into the solution of a national problem his skill and experience in the human maintenance department of modern industry. As a physician he can take stock of a man's physical assets in relation to the work he can perform and, in cooperation with efficient employment managers, can place that man in his most advantageous occupation. But not all of our soldiers and sailors will come back physically fit. Some will return with physical capital much depleted. Some have been crippled or maimed or blinded. Some have been disabled by less apparent but no less serious injuries, such as shell shock and

other war neuroses, disease, strain, exposure and other incidents of modern warfare. For these the government is making adequate provision for medical and surgical treatment, convalescent care, occupational therapy, vocational education and for placement in gainful employment. In carrying out this program, industrial physicians and surgeons have been given an important place. As these reconstructed men return to civilian life to become self-supporting members of society rather than pensioners, the industrial physician, by the nature of his calling, will be the wisest guide in their placement in industry and in the maintenance of their productive ability.

TERMINAL INFECTIONS

The reactions by which the organism defends itself against bacteria are by no means simple in nature. Despite the almost limitless opportunities for the introduction of the micro-organisms, they rarely reach the blood stream. This is due in part to mechanisms that prevent their passage through the exterior of the body, or devices that destroy them within the alimentary path. It is further due, however, to factors of immunity which are chemical in nature. Whenever bodily resistance of this sort is referred to we think of the so-called immunity reactions. Bacteriolysins, agglutinins, precipitins and opsonins play a prominent part in determining whether bacteria can be present or multiply in the blood. It is commonly believed that prior to death from other than very acute or accidental causes the natural defenses of the body may fail to a large extent. If this is true we may expect that invasion of the blood stream will be frequent, and consequently true terminal infections may be added to those already present as a primary cause of disease. The question here involved is capable of at least partial solution by actual examination of the blood—by investigation of bacteremias in the agonal period. This aspect of the bacterial invasion of the blood stream has been considered recently at the Magee Pathological Laboratories of the Mercy Hospital in Pittsburgh by Richey and Goehring,[1] who tried to determine the frequency of the presence of bacteria in the peripheral vessels immediately after death. This anatomic location was selected in preference to the heart as a source of the blood because of the relatively great postmortem invasion of the heart's blood from surrounding structures. Out of more than 200 cases, about one third gave positive cultures. The value of the method was fortified by the fact that when antemortem cultures were taken, the results were usually the same as those obtained by immediate postmortem examination through the median basilic or cephalic vein. In the acute traumatic deaths only one positive culture was obtained out of thirty-six examinations. This was in striking contrast to the thirty-six positive results out of fifty-five trials in the case of chronic debilitating diseases. Cocci appeared to be the commonest invaders of the blood stream, the representative of the streptococcus-pneumococcus group being most conspicuous. Pneumococci were isolated immediately after death in 50 per cent. of the cases diagnosed clinically as pneumonia. There can no longer be any doubt that true terminal infections frequently occur under the conditions of lowered resistance. Judging from the character of the organisms isolated, the main foci are probably in the intestine, the pulmonary alveoli, the upper respiratory passages, and other mucous membranes.

1. Richey, D. G., and Goehring, C.: Sudies on Bacteremias in the Agonal Period, Jour. Med. Research, 1918, **38**, 421.

THE BACTERIA ON VEGETABLES

In the earlier days of modern bacteriologic technic there was developed a sort of semipopular scientific sport which might not inaptly have been termed "microbe hunting." Air, food and water, books and bankbills, toys and toggery were examined for evidences of bacteria. Danger seemed to lurk in everything that was acceptable to mankind, until the realization came that not all bacteria are baneful, and that some may even be beneficent. Thus it became the duty of the bacteriologist to identify our microbial enemies and direct his hygienic warfare more specifically against them. There are other lessons, too, that progress has taught. The unsuspected carrier has been brought into the limelight. In the dairy industry the importance of the cleanliness of the utensils used and of the personnel has become emphasized along with the necessity of keeping the milk-producing animal free from objectionable germs. Lately considerable has been said about the significance of sanitary conditions of food shops for the public health. In this connection a recent bacterial examination of green vegetables sold in Chicago stores is not without interest. At the University of Chicago, Kurk[1] attempted to discover whether the general sanitary condition of the store at which the purchase was made had any influence on the bacterial contents. *Bacillus coli* was found on twenty-two out of twenty-nine samples of the vegetables. It was present in ten out of twelve samples from stores classified as clean; in six out of ten samples from stores classed as fair, in five out of six from dirty stores and in watercress from a free lunch counter. Streptococci were found on three samples, two being from clean stores. Thus there was no indication that the general sanitary conditions of the store influenced the bacterial count. A clean shop is not a guarantee of hygienic safety; for food, like man, may be a carrier.

1. Kurk, F. W.: A Bacterial Examination of Green Vegetables, Am. Jour. Pub. Health, 1918, **8**, 660.

"SCIENTIFIC" NOMENCLATURE

A member of the Association's chemical laboratory, who is in the service, writes from a well-known eastern institution deploring the use of proprietary names around the laboratory there. He writes:

> In bacteriology we disinfect our hands with a solution labeled, "Lysol." I asked one of the instructors why they didn't use Liquor Cresolis Compositus. He replied that that actually was the substance in the bottle, but that it was labeled "Lysol" so the doctors would know what they wanted!

Comment on this would be gilding refined gold, and painting the lily.

Medical Mobilization and the War

Personnel of the Medical Department

On November 22 the total commissioned personnel of the Medical Corps was 31,158, a decrease of 240 from the previous week, consisting of 3 major-generals, 7 brigadier-generals, 187 colonels, 431 lieutenant-colonels, 2,338 majors, 9,807 captains and 18,385 first lieutenants. The total number in active service was 30,339, a decrease from the previous week of 252. To date 2,791 officers have been discharged for the following causes: physical disability, 1,006; inaptitude, 333; other branches of service, 727; resignations, 305; domestic troubles, 64; needed by community, 50; deaths, 261; dismissals, 24; duty completed, 3; no reasons given, 18.

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Alabama

To Camp Custer, Mich., base hospital, for instruction, from Fort Oglethorpe, Major M. MASON, Birmingham.

To Camp Jackson, S. C., base hospital, for instruction, from Fort Oglethorpe, Capt. D. G. CAMPBELL, Mobile.

To Camp Sheridan, Ala., base hospital, from Fort Oglethorpe, Lieut. W. L. SHACKLEFORD, Gordo.

To Canal Zone, from Washington, Major G. H. S. SEARCY, Tuscaloosa.

To Cape May, N. J., base hospital, from Fort Sill, Lieut. C. H. DRAKE, Birmingham.

To Charleston, S. C., from Camp Beauregard, Capt. S. G. GAY, Selma.

To Fort Oglethorpe, evacuation hospital, from Camp Joseph E. Johnston, Lieut. J. R. CHISOLM, Marion Junction.

To Omaha, Neb., Creighton University, from Lincoln, Lieut. R. CALLEN, Birmingham.

To Port Clinton, Ohio, from Atlanta, Major W. C. DABNEY, Birmingham.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Meade, Md.*, base hospital, from Fort Oglethorpe, Capt. J. H. ASHCRAFT, Fayette. On completion *to Camp Upton, N. Y.*, base hospital, from Fort Oglethorpe, Capt. F. P. PETTEY, Albany.

To St. Paul, Minn., Overland Bldg., from Fort Wayne, Mich., Capt. A. P. WEBB, Atmore.

Alaska

To Camp Meade, Md., base hospital, from Fort Oglethorpe, Capt. W. T. H. PALLISTER, Juneau.

Arizona

To Camp Sheridan, Ala., base hospital, from Fort Oglethorpe, Lieut. E. B. THOMPSON, Benson.

To Cape May, N. J., base hospital, from Walter Reed General Hospital, Capt. C. A. THOMAS, Tucson.

Arkansas

To Camp Colt, Pa., from Camp Custer, Lieut. W. M. MAJORS, Walcott.

To Camp Jackson, S. C., from Camp Custer, Lieut. W. M. MATTHEWS, Crossett.

To Camp Knox, Ky., from Fort Oglethorpe, Lieut. A. C. KOLB, Hope.

To Carlisle, Pa., from Plattsburg Barracks, Lieut. J. B. HESTERLY, Prescott.

To Cincinnati, Ohio, University of Cincinnati, from Camp Custer, Lieut. E. BAKER, Dermott.

To Fort Snelling, Minn., from Jefferson Barracks, Major W. K. READ, Texarkana.

California

To Army Medical School for instruction, from New Cumberland, Pa., Lieut. R. W. WILCOX, San Francisco.

To Boston, Mass., from Camp Custer, Capts. J. E. CLARK, Oakland; E. A. JONES, Taft.

To Camp Cody, N. M., base hospital, from Camp Kearney, Major H. C. LOOS, San Diego.

To Camp Crane, Pa., from Camp Kearney, Capt. E. H. THOMPSON, Burbank. Base hospital, from Fort Douglas, Capt. W. B. DEAS; from Camp Fremont, Capt. R. PATEK, San Francisco; from New York, Lieut. F. H. TAYLOR, San Diego. Evacuation hospital, from San Francisco, Capt. C. A. BELL, Santa Barbara. Mobile hospital, from Camp Kearney, Lieut. J. H. NORMAN, Allegheny. Surgical group, from Camp Kearney, Capt. J. C. ROBERTSON, Modesto.

To Camp Custer, Mich., base hospital, for instruction, from Fort Oglethorpe, Capt. H. L. PARISH, Oakland.

To Camp Jackson, S. C., from Camp Custer, Lieut. W. F. KELLER, Long Beach.

To Camp Kearney, Calif., Capt. C. H. WILDER, Oakland.

To Camp Kendrick, N. J., from Fort Sill, Lieut. G. F. HARRIS, San Diego.

To Camp Lewis, Wash., as orthopedic surgeon, from San Francisco, Capt. N. T. ENLOE, Chico; Lieut. D. R. WILSON, San Jose.

To Camp Sevier, S. C., as tuberculosis examiner, from New Haven, Major R. L. BYRNES, Los Angeles. Base hospital, from Fort McDowell, Col. P. C. FAUNTLEROY.

To Camp Shelby, Miss., base hospital, from Camp Fremont, Capt. T. R. McNAB, Los Angeles; from Camp Pike, Capt. G. J. BERGENER, San Francisco.

To Camp Upton, N. Y., base hospital, from Camp Wheeler, Lieut. H. D. WILLIAMS, San Francisco; from Fort Oglethorpe, Capt. J. C. COPELAND, Los Angeles.

To Camp Wheeler, Ga., base hospital, from Camp Kearney, Lieut. G. H. BOYD, Los Angeles; from Fort Oglethorpe, Capt. J. G. HAM, San Bernardino.

To Cape May, N. J., base hospital, from Camp Grant, Capt. C. A. JOHNSON, Los Angeles; from Rock Island Arsenal, Capt. F. F. SPRAGUE, Los Banos.

To Fort McHenry, Md., from Ann Arbor, Capt. B. P. STOOKEY, Los Angeles.

To Fort Sheridan, Ill., base hospital, from Camp Cody, Capt. W. H. SMITH, Los Angeles; from Camp Lewis, Capt. R. CADWALLADER, San Francisco.

To Mineola, N. Y., Hazelhurst Field, for instruction, from Fort Riley, Capt. V. D. BROWN, San Francisco.

To report to the commanding general, Southeastern Department, from North Charleston, Lieut. A. E. DICKINSON, San Jose.

To San Francisco, Calif., Leland Stanford University, for instruction, from Letterman General Hospital, Capts. W. C. BAKER, San Mateo; E. L. COTTRELL, Scotia; Lieut. L. DOZIER, Stockton. Letterman General Hospital, Major L. ELOESSER, San Francisco.

The following order has been revoked: *To Camp Crane, Pa.*, from San Francisco, Major A. C. CARLTON, San Mateo.

Canal Zone

To Camp Crane, Pa., mobile hospital, from New Haven, Lieut. D. J. MURPHY, Corozal.

To Fort Oglethorpe, evacuation hospital, from Camp Shelby, Lieut. L. M. DRENNAN, Ancon.

Colorado

To Azalea, N. C., from Markleton, Pa., Major P. A. LOOMIS, Colorado Springs.

To Camp Greene, N. C., base hospital, from Camp Logan, Major J. H. BROWN, Colorado Springs.

To Camp Knox, Ky., from Fort Oglethorpe, Lieut. P. C. GEISSLER, Colorado Springs.

To Camp Lee, Va., base hospital, from Fort Riley, Lieut. R. L. CHARLES, Denver.

To Camp Logan, Texas, base hospital, from Camp Shelby, Capt. T. A. STODDARD, Pueblo.

To Camp Sheridan, Montgomery, Ala., from Cedar Falls, Capt. J. A. DUNWODY, Cripple Creek.

To Camp Wadsworth, S. C., base hospital, from Fort Riley, Lieut. K. F. ROEHRIG, Denver.

To Fort Oglethorpe, evacuation hospital, from Camp Cody, Major H. S. FINNEY, Denver.

To Fort Sheridan, Ill., base hospital, from Fort Riley, Lieut. A. R. WILLIAMSON, Pueblo.

To Newport News, Va., from Rockefeller Institute, Capt. E. G. GRIFFIN, Denver.

To Urbana, Ill., University of Illinois, Lieut.-Col. C. N. BARNEY, Denver.

To Washington, D. C., from Fort Oglethorpe, Lieut. P. B. WALLACE, Eagle.

Connecticut

To Camp Abraham Eustis, Va., base hospital, from New Haven, Lieut. H. W. BRAYTON, Hartford.

To Camp Sevier, S. C., base hospital, from Camp Gordon, Capt. R. W. LOWE, Ridgefield.

To Camp Shelby, Miss., base hospital, from Fort Oglethorpe, Capt. F. F. SIMONTON, Thompsonville.

District of Columbia

To Camp Bowie, Texas, as division surgeon, Lieut.-Col. H. B. McINTYRE.

To Camp Crane, Pa., base hospital, from Lakewood, N. J., Lieut. F. D. ADAMS, Washington. Surgical group, from Walter Reed General Hospital, Lieut.-Col. F. B. LUND.

To Camp Devens, Mass., base hospital, from Fort Oglethorpe, Capt. P. E. LARKIN, Washington.

To Camp McClellan, Ala., as division surgeon, Lieut.-Col. A. W. SCHOENLEBER.

To Edgewood, Md., from Walter Reed General Hospital, Lieut. H. F. DUNN, Washington.

To the inactive list, from Western Department, Lieut.-Col. W. P. BANTA.

Florida

To Army Medical School for instruction, from Newport News, Major J. W. ALSOBROOK, Plant City.

To Camp Crane, Pa., base hospital, from Fort Oglethorpe, Capt. D. FORSTER, Hawks Park; from Lakewood, N. J., Lieut. A. J. WOOD, St. Petersburg.

To Camp Sheridan, Ala., base hospital, from Camp Shelby, Capt. G. R. HOLDEN, Jacksonville.

To Charleston, S. C., from Camp Lee, Major G. R. PLUMMER, Key West.

To Fort Ethan Allen, Vt., base hospital, from Camp Devens, Capt. L. A. PEEK, West Palm Beach.

Georgia

To Atlanta, Ga., Morehouse College and Atlanta University, from duty as a private, Lieut. R. B. FOSTER, Athens.

To Camp Colt, Pa., from Camp Upton, Lieut. C. A. WITMER, Waycross.

To Camp Crane, Pa., evacuation hospital, from Camp Jackson, Capt. W. B. CRAWFORD, Savannah.

To Camp Gordon, Ga., from Walter Reed General Hospital, Lieut. C. REED, Babcock.

To Camp Sherman, Ohio, sanitary train, from Fort Oglethorpe, Lieut.-Col. J. L. ROBINSON.

To Camp Wadsworth, S. C., base hospital, from Fort Oglethorpe, Lieut. J. G. DEVANE, Adel.

To San Antonio, Texas, Kelly Field, from Americus, Ga., Lieut. J. M. J. LIKE, Fitzgerald.

To White Plains, N. Y., for instruction, from Fort McPherson, Capt. G. P. HUGULEY, Atlanta.

Idaho

To Washington, D. C., for instruction, from Jefferson Barracks, Capt. R. E. MASON, Mackay.

Illinois

To Ann Arbor, Mich., University of Michigan, for instruction, from New York, Capt. O. T. ROBERG, Chicago.

To Austin, Texas, Texas State University, from Indianapolis, Major O. A. SUTTLE, Mount Vernon.

To Biltmore, N. C., from Camp Crane, Lieut. H. E. LUTYENS, Farmingdale.

To Boston, Mass., from Camp Custer, Lieut. H. D. EATON, Harvard.

To Camp Crane, Pa., evacuation hospital, from Camp Grant, Lieut. P. F. SNYDER, Chicago; from New York, Capt. H. A. BEAM, Moline. Mobile hospital, from New Haven, Lieut. P. B. RABENNECK, Nashville.

To Camp Custer, Mich., base hospital, for instruction, Capts. P. M. OLIVER, W. J. SWIFT, Chicago.

To Camp Forrest, Ga., to examine drafted men for nervous and mental diseases, from Fort Oglethorpe, Capt. I. J. FRISCH, Chicago.

To Camp Greene, N. C., from Fort Oglethorpe, Lieut. S. E. LYNCH, Chicago. Base hospital, from Camp Hancock, Lieut. E. H. SEIFERT, Chicago.

To Camp Hancock, Ga., base hospital, for instruction, from Fort Oglethorpe, Lieut. E. ZIMMERMAN, Quincy.

To Camp Jackson, S. C., from Camp Custer, Lieuts. J. J. LEACH, P. P. O'CONNOR, Chicago; J. R. BIERLY, Springfield.

To Camp Joseph E. Johnston, Fla., base hospital, for instruction, from Fort Oglethorpe, Capt. L. A. BEATON, Chicago; Lieut. E. AUSTIN, Benton.

To Camp Kendrick, N. J., from Camp Colt, Lieut. R. M. MONTFORT, Danville.

To Camp Logan, Texas, base hospital, from Fort Oglethorpe, Capt. T. H. PAGE, Peoria. Base hospital, for instruction, from Fort Oglethorpe, Lieut. H. H. FLETCHER, Winchester. *To examine drafted men* and on completion *to base hospital*, from Fort Oglethorpe, Capt. F. W. JONES, Alton.

To Camp MacArthur, Texas, base hospital, from Fort Oglethorpe, Lieut. G. T. MEACHAM, Taylorville.

To Camp McClellan, Ala., base hospital, from Camp Beauregard, Major T. O. WARD, Mount Vernon; from Fort Oglethorpe, Capt. J. K. RETICKER, Quincy.

To Camp Sevier, S. C., base hospital, from Fort Oglethorpe, Capt. L. A. BURHANS, Peoria.

To Camp Shelby, Miss., base hospital, from Camp Gordon, Capt. H. L. THOMPSON, Harrisburg.

To Camp Sheridan, Ala., from Fort Oglethorpe, Lieuts. G. W. WESTERMEIER, Carlinville; G. E. KNAPPENBERGER, Macomb. Base hospital, from Fort Oglethorpe, Capt. H. G. WRIGHT, DeKalb; Lieut. W. G. McCANDLESS, Sterling.

To Camp Travis, Texas, base hospital, for instruction, Lieut. G. HALPERIN, Chicago.

To Camp Upton, N. Y., base hospital, from Camp Sherman, Lieut. L. B. SHORT, East St. Louis; from Fort Oglethorpe, Capt. H. JACKSON, Chicago; Lieut. W. I. GREEN, Sumner.

To Camp Wadsworth, S. C., base hospital, from Fort Oglethorpe, Lieuts. W. H. MILLER, Chicago; C. L. CAREY, Marion.

To Camp Wheeler, Ga., as assistant to division surgeon, from Camp McClellan, Lieut. G. F. RENDLEMAN, Anna.

To Cape May, N. J., base hospital, from Camp Custer, Capt. D. N. EISENDRATH, Chicago; from Camp Hancock, Lieut. E. L. CAVENEE, Champaign; from Camp Meade, Lieut. A. J. LINOWIECKI, Chicago; from Fort Sill, Lieut. E. A. SCHLAGETER, Chicago.

To Dansville, N. Y., from Syracuse, Capt. A. E. MOWRY, Chicago.

To Eastern Department, from Camp Upton, Capt. J. A. KLEINSMID, Aledo.

To Fort Bayard, N. M., from Denver, Capt. H. C. MILLER, Chicago.

To Fort Benjamin Harrison, Ind., base hospital, from Jefferson Barracks, Major J. W. TURNER, Pleasant Hill.

To Fort Oglethorpe, evacuation hospital, from Camp Cody, Capt. H. A. MILLARD, Minonk; from Camp Zachary Taylor, Capt. R. T. VAUGHAN, Chicago. For instruction, Lieut. M. V. ROBINSON, Chicago; from Camp Forrest, Capt. I. J. FRISCH, Chicago.

To Fort Sam Houston, Texas, for instruction, from Camp Hancock, Lieut. J. A. BOZARTH, McLeansboro; from Fort Oglethorpe, Capt. G. D. DRENNAN, Woodhull.

To Fort Sheridan, Ill., base hospital, from Camp Custer, Lieut. B. W. CLAYPOOL, Chicago; from Camp Grant, Capt. G. S. DUNTLEY, Bushnell; Lieut. H. W. VERNON, Chicago; from Fort Snelling, Major E. K. FINDLAY, Chicago.

To Fort Snelling, Minn., from Fort Riley, Capt. E. Z. LEVITIN, Peoria.

To Lakewood, N. J., from Hoboken, Lieut. E. J. DEVINE, Chicago.

To Nashville, Tenn., Meharry Medical College and Fisk University, from duty as a private, Lieut. W. H. CALHOUN, Chicago.

To Plattsburg Barracks, N. Y., base hospital, from Camp Devens, Major F. S. CHURCHILL, Chicago.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp A. A. Humphreys, Va.*, base hospital, from Fort Oglethorpe, Lieut. O. B. ORMSBY, Murphysboro. On completion *to Camp Dix, N. J.*, base hospital, from Fort Oglethorpe, Capt. J. E. WOELFLE, Cairo; Lieut. K. W. WAHLBERG, Moline.

To Roland Park, Md., from Camp Gordon, Capt. OTIS H. MACLAY, Chicago.

To San Antonio, Texas, Kelly Field, from Wichita Falls, Texas, Capt. R. H. KUHNS, Chicago. *To examine the command* for nervous and mental diseases, Lieut. F. A. CAUSEY, Peoria.

To Waynesville, N. C., from Army Medical School, Lieut. W. S. NEEDHAM, Hanna City; from New Haven, Lieut. J. L. ANDERSON, Winfield.

To Williamsbridge, N. Y., from Chicago, Major W. FULLER, Chicago.

The following order has been revoked: *To Fort Oglethorpe*, evacuation hospital, from Fort Riley, Lieut. F. C. FINK, Pleasant Plains.

Indiana

To Ames, Iowa, from Pine Bluff, Ark., Capt. A. T. FAGALY, Lawrenceburg.

To Boston, Mass., from Camp Custer, Lieut. V. G. BLACK, Fishers.

To Camp A. A. Humphreys, Va., base hospital, from Fort Oglethorpe, Capt. A. W. LLOYD, Hammond.

To Camp Abraham Eustis, Va., base hospital, from Camp Sheridan, Lieut. E. H. CLAUSER, Muncie.

To Camp Crane, Pa., base hospital, from Camp Zachary Taylor, Lieut. J. G. BOSTWICK, Mishawaka; from Lakewood, Lieut. G. N. DRULEY, North Webster. Evacuation hospital, from Camp Grant, Lieut. B. E. LEMMON, Greencastle.

To Camp Jackson, S. C., from Camp Custer, Lieut. H. H. ISAACS, Tangier.

To Camp Meade, Md., from Fort Leavenworth, Capt. D. V. McCLARY, Dale.

To Camp Pike, Ark., from Camp Zachary Taylor, Lieut. H. G. HAMER, Indianapolis.

To Camp Sevier, S. C., base hospital, from Fort Oglethorpe, Lieuts. R. P. HALE, East Chicago; L. R. ELLARS, Peruna.

To Camp Shelby, Miss., base hospital, from Camp Bowie, Capt. M. I. ROSENTHAL, Fort Wayne; from Camp Jackson, Capt. J. W. SHAFER, Lafayette; from Fort Oglethorpe, Capt. R. M. TILTON, Columbus.

To Camp Sheridan, Ala., from Camp Colt, Capt. C. L. ROWLAND, West Point.

To Camp Upton, N. Y., base hospital, from Camp Grant, Capt. C. S. BOARDMAN, Gary.

To Camp Wadsworth, S. C., base hospital, from Fort Oglethorpe, Lieut. M. B. GUTHRIE, Bedford.

To Camp Wheeler, Ga., base hospital,, for instruction, from Fort Oglethorpe, Lieut. C. A. McNEILL, Indianapolis.

To Fort Des Moines, Iowa, from Camp Dodge, Capt. I. M. WASHBURN, Rensselaer.

To Fort Myer, Va., from Fort McHenry, Capt. G. W. BONER, Washington.

To Fort Oglethorpe, evacuation hospital, from Camp Jackson, Capt. H. H. WHEELER, Indianapolis; from Camp Sevier, Capt. O. E. FINK, Terre Haute; from Camp Zachary Taylor, Lieut. J. W. CARMACK, Indianapolis. For instruction, from Ann Arbor, Capt. H. B. SHACKLETT, New Albany.

To Hoboken, N. J., base hospital, from Fort Oglethorpe, Lieut. J. V. KERRIGAN, Michigan City.

To Rockefeller Institute for instruction, from Camp Meade, Lieut. E. L. SCHAIBLE, Gary; from New Haven, Capt. J. P. SEALE, Fairmount. For instruction in the treatment of infected wounds and on completion *to Camp Dix, N. J.*, base hospital, from Fort Oglethorpe, Capt. F. A. ZELLER, Union City.

To Williamsbridge, N. Y., from Camp Upton, Capt. H. B. COX, Morristown.

To Washington, D. C., from Camp Zachary Taylor, Lieut. C. W. COREY, Hartford City.

Iowa

To Boston, Mass., from Camp Custer, Capt. T. LUCAST, Forest City.

To Camp Abraham Eustis, Va., from Camp Custer, Lieut. J. W. MYERS, Sheldon.

To Camp Crane, Pa., mobile hospital, from Fort Oglethorpe, Capt. R. B. MORDEN, Des Moines; Lieut. T. A. BURKE, Mason City.

To Camp Jackson, S. C., from Camp Custer, Lieut. C. C. BOWIE, Dedham.

To Camp Sevier, S. C., base hospital, for instruction, from Fort Oglethorpe, Lieut. C. E. DAKIN, Mason City.

To Camp Sheridan, Ala., from Fort Oglethorpe, Capt. I. W. TRAVERSE, Fort Madison.

To Camp Upton, N. Y., base hospital, from Fort Oglethorpe, Capt. C. W. MEHLOP, Dubuque.

To Camp Wadsworth, S. C., base hospital, from Camp Bowie, Lieut. C. E. MAGOUN, Sioux City; from Camp Travis, Capt. G. W. YAVORSKY, Belle Plaine.

To Camp Wheeler, Ga., as sanitary inspector, Capt. H. R. REYNOLDS, Clinton. Base hospital, from Camp Sheridan, Lieut. R. E. PARRY, Scranton.

To Fort Des Moines, Iowa, from Walter Reed General Hospital, Capt. J. M. KILBORNE, Sioux City.

To Fort Oglethorpe, evacuation hospital, from Camp Cody, Lieut. J. E. REEDER, Sioux City. For instruction, Lieut. H. G. MOERSHEL, Homestead.

To Fort Sheridan, Ill., base hospital, from Fort Riley, Lieut. J. R. BLACK, Jefferson.

To Rockefeller Institute for instruction, from New Haven, Lieut. W. H. HOMBACH, Remsen.

The following order has been revoked: *To Camp Cody, N. M.*, from Hawaiian Department, Major A. V. HENNESSY, Council Bluffs.

Kansas

To Boston, Mass., from Camp Custer, Capt. H. G. HUNSBERGER, Mount Hope; Lieut. C. W. LONGENECKER, Kingman. For instruction, from Camp Zachary Taylor, Capt. G. M. GAFFORD, Kinsley.

To Camp Jackson, S. C., from Camp Custer, Lieut. W. S. HUDIBURG, Independence.

To Fort Des Moines, Iowa, from Lakewood, Lieut. H. M. WEBB, Humboldt.

To Fort Douglas, Utah, from New Haven, Lieut. T. M. AGNEW, Wichita.

To Fort Oglethorpe, evacuation hospital, from El Paso, Capt. L. B. SPAKE, Kansas City. For instruction, Lieut. W. H. YOUNG, Fredonia.

To Fort Sheridan, Ill., base hospital, from Fort Riley, Lieut. W. P. CALLAHAN, Wichita.

To Rockefeller Institute for instruction, from New Haven, Lieut. R. W. VAN DEVENTER, Wellington.

The following orders have been revoked: *To Hoboken, N. J.*, from Fort Oglethorpe, Capt. G. A. LANDES, Parsons. *To San Antonio, Texas*, Kelly Field, from Garden City, Lieut. W. H. ROBINSON, Endira.

Kentucky

To Camp Crane, Pa., base hospital, from Camp Hancock, Capt. J. R. COWAN, Danville; from New Haven, Capt. H. T. LIGGETT, Louisville; Lieut. W. G. COMBS, Kirksville.

To Camp Shelby, Miss., base hospital, from Camp Gordon, Lieut. A. H. SHEMWELL, Paducah; from Fort Oglethorpe, Lieut. S. L. HENSON, Benton.

To Camp Sheridan, Ala., from Camp Meade, Capt. J. G. TALBOT, Burkesville; from Fort Oglethorpe, Capt. W. F. ALVEY, Elizabethtown; Lieut. C. H. JONES, Lynn Grove.

To Camp Travis, Texas, from Hoboken, Capt. E. C. BRANDON, Springfield.

To Fort McPherson, Ga., from Fort Oglethorpe, Lieut. A. C. WILLMOTT, Hutchinson.

To Fort Oglethorpe, evacuation hospital, from Camp Shelby, Lieut. J. F. MORGAN, Cynthiana.

To Fort Ontario, N. Y., from Fort Porter, Major M. H. YEAMAN, Henderson.

To Watertown, Mass., from Camp Upton, Capt. M. M. MOSS, Bowling Green.

Louisiana

To Camp Beauregard, La., Lieut. W. W. SMITH, Shreveport.
To Camp Greene, N. C., base hospital, from Fort Oglethorpe, Capt. W. H. AIKEN, New Orleans.
To Camp Shelby, Miss., base hospital, from Fort Oglethorpe, Lieut. R. D. MARTINEZ, Bunkie.
To Camp Sheridan, Ala., Lieut. F. PALMER, Blackburn.
To Cape May, N. J., base hospital, from Walter Reed General Hospital, Capt. J. G. MARTIN, Lake Charles.
To Fort Oglethorpt, evacuation hospital from Camp MacArthur, Capt. S. L. WHITE, Ruston; Lieut. R. C. WEBB, Rayne.
To Fort Sheridan, Ill., base hospital, from Fort Riley, Capt. J. L. KELLY, Melrose.
To St. Paul, Minn., Overland Building, from Fort Wayne, Lieut. H. C. CHAMBERS, Girard.

Maine

To Camp Crane, Pa., base hospital, from Fort McPherson, Capt. C. D. McDONALD, Portland.
To Camp Shelby, Miss., base hospital, from Fort Oglethorpe, Lieut. H. W. FROHOCK, Rockland.
To Camp Wheeler, Ga., base hospital, from Camp Gordon, Lieut. H. C. BUNDY, Lake View.
To Camp May, N. J., from Camp Dix, Lieut. C. D. GRAY, Portland.
To Fort Monroe, Va., from Fort Oglethorpe, Lieut. L. O. ROY, Lewiston.
To Fort Oglethorpe, evacuation hospital, from Camp Zachary Taylor, Lieut. L. H. TRUFANT, Norway.
To Fort Porter, N. Y., from Newport News, Capt. F. T. KOYLE, Fort Levett.
To Walter Reed General Hospital, D. C., from Camp Pike, Capt. A. WOODCOCK, Bangor.
The following order has been revoked: *To San Antonio, Texas*, Kelly Field from Garden City, Lieut. R. D. WALTON, Frankfort.

Maryland

To Camp Abraham Eustis, Va., Lieut. J. C. Baldwin, Baltimore.
To Camp Crane, Pa., excauation hospital, from Camp Meade, Lieut. H. H. WARNER, Baltimore.
To Camp Forest, Ga., to examine drafted men for nervous and mental disasses, from Camp Meade, Lieut. F. N. OGDEN, Sykesville.
To Camp Greene, N. C., base hospital, from Fort Oglethorpe, Lieut. M. RASKIN, Baltimore.
To Camp Sheridan, Ala., base hospital, for instruction, from Fort Oglethorpe, Lieut. E. G. HALL, Baltimore.
To Camp Upton, N. Y., base hospital, from Camp Lee, Lieut. W. L. JACKSON, Baltimore; from Camp Meade, Lieut. S. H. STREETT, Baltimore; from Camp Shelby, Lieut. G. W. BISHOP, Govans.
To Fort San Houston, Texas, Capt. R. E. Caldwell, Bivalve.
To Garden City, N. Y., to examine the troops for cardiovascular diseases, from Lakewood, Lieut. J. T. KING, Jr., Baltimore.
To Walter Reed General Hospital, D. C., for instruction, from Fort Oglethorpe, Lieut. W. L. DENNY, Baltimore.
To Washington, D. C., from Edgewood, Major S. L. CHAPPELL.

Massachusetts

To Atlanta, Ga., Emory University, from Miami, Fla., Lieut. A. O. McLAUGHLIN, Haverhill.
To Boston, Mass., Capt. F. H. McCRUDDEN, Boston; from Camp Devens, Lieut. W. H. MERRILL, Lawrence; from Camp Dix, Lieut. W. T. HOLLAND, Boston; from Fort McHenry, Capt. F. A. DAVIS, Boston.
To Camp A. A. Humphreys, Va., as orthopedic surgeon, from Walter Reed General Hospital, Lieut. A. D. VAMVAS, Boston.
To Camp Crane, Pa., base hospital, from Baltimore, Lieut. E. E. SMITH, Webster; from Camp Devens, Capt. J. H. WYMAN, Medway; from Camp Hancock, Major E. B. BIGELOW, Worcester. Evacuation hospital, from Camp Dix, Lieut. T. J. NORTON, Pittsfield; from Fort Benjamin Harrison, Lieut. C. L. HOITT, Lynn. Surgical group, from Camp Upton, Capt. W. G. DROUIN, Holyoke; from Camp Wheeler, Capt. E. A. KNOWLTON, Holyoke.
To Camp Devens, Mass., from Fort Oglethorpe, Major W. S. PARKER, Boston.
To Camp Knox, Ky., from Fort Oglethorpe, Lieut. D. G. PLUMB, Melrose.
To Camp McClellan, Ala., base hosiptal, from Fort Oglethorpe, Lieut. T. R. DONOVAN, Fitchburg.
To Camp Upton, N. Y., as camp surgeon, from East Norfolk, Mass., Major R. P. WILLIAMS.
To Camp Wadsworth, S. C., base hospital, from Camp MacArthur, Capt. J. H. DEWEES, Boston.
To Camp Wheeler, Ga., base hospital, from Fort Oglethorpe, Capt. R. B. OBER, Springfield. Base hospital, for instruction, from Fort Oglethorpe, Capt. L. J. MASKELL, Newton.
To Eastern Department, from Camp Upton, Capts. H. H. SUMNER, Lowell; W. H. ALLEN, Mansfield.
To Fort Bayard, N. M., from Camp Upton, Capt. D. J. HURLEY, Charleston.
To Fort McPherson, Ga., from Camp Devens, Capt. H. J. FITZ-SIMMONS, Boston.
To Fort Slocum, N. Y., as orthopedic surgeon, from Capt. Joseph E. Johnston, Lieut. M. A. GILBERT, Chelsea.
To Garden City, N. Y., from Mineola, Major C. S. BUTLER, Boston.
To Hoboken, N. J., base hospital, from Camp Wadsworth, Lieut. G. HARTMANN, Lynn.
To Lakewood, N. J., from Camp Devens, Major S. J. MIXTER, Boston.
To New Haven, Conn., from Camp Devens, Major L. H. SPOONER, Boston.
To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Wheeler, Ga.*, base hospital, from Fort Oglethorpe, Major H. ROBB, Winchester; Lieut. E. W. SMITH, Newton.
To Walter Reed General Hospital, D. C., from Camp Devens, Lieut.-Col. C. FROTHINGHAM, Jr., Boston.
The following orders have been revoked: *To Camp Hancock, Ga.*, base hospital, from Fort Oglethorpe, Lieut. G. L. STEELE, West Springfield. *To Camp Shelby, Miss.*, from Camp Jackson, Lieut. N. HOLDEN, Malden.

Michigan

To Camp Cody, N. M., as assistant to camp surgeon, from Camp Zachary Taylor, Lieut. D. M. GRISWOLD, Grosse Pointe.
To Camp Crane, Pa., mobile hospital, from Camp Meade, Capt. R. K. YOUNG, Detroit.
To Camp Custer, Mich., base hospital, Capt. W. H. DIEBEL, Detroit.
To Camp Joseph E. Johnston, Fla., base hospital, from Camp Bowie, Lieut. W. L. SHERMAN, Detriot.
To Camp Sheridan, Ala., from Angola, Ind., Lieut. A. J. McKILLOP, Wolverine.
To Fairchild, Ohio, Wilbur Wright Field, from Mount Clemens, Lieut. W. L. SHERMAN, Detroit.
To Fort Benjamin Harrison, Ind., Capt. H. G. PALMER, Detroit.
To Fort Crockett, Texas, as tuberculosis examiner, from Fort Sam Houston, Capt. R. L. FELLERS, Detroit.
To Fort Sheridan, Ill., base hospital, from Camp Zachary Taylor, Lieut. J. J. O'MEARA, Jackson; from Fort Des Moines, Lieuts. H. LIEFFERS, Coopersville; G. H. CAMPAU, Detroit.
To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Wadsworth, S. C.*, base hospital, from Fort Oglethorpe, Lieut. C. J. JENTGEN, Detroit.
To San Antonio, Texas, Kelly Field, to examine troops for cardio-vascular diseases, from Camp Pike, Lieut. L. M. BUSH, Detroit.
To Washington, D. C., Bolling Field, from Mount Clemens, Lieut. H. A. MILLER, Lansing.
To Williamsbridge, N. Y., from Camp Jackson, Capt. J. S. BROTHERHOOD, Grand Rapids.
Honorably discharged on account of physical disability incurred in line of duty, Capt. T. G. HOLMES, Detroit.
Resignation of Major G. E. McKEAN, Detroit, accepted.

Minnesota

To Boston, Mass., from Camp Custer, Lieut. A. M. CRANDALL, Fairfax.
To Camp Crane, Pa., from Rochester, Major J. C. MASSON, Rochester. Base hospital, from Camp Dodge, Capt. F. M. MANSON, Worthington; from Fort. McPherson, Capt. A. W. SHALEEN, Hallock; from New Haven, Lieut. W. H. DANIELS, Crookston.
To Camp Joseph E. Johnston, Fla., base hospital, from Camp Wheeler, Lieut. G. C. DITTMAN, St. Paul.
To Camp Shelby, Miss., base hospital, from Fort Oglethorpe, Lieuts. J. E. O'DONNELL, Minneapolis; E. R. REYNOLDS, Rochester.
To Camp Sheridan, Ala., base hospital, for instruction, from Fort Oglethorpe, Capt. J. F. X. GENDRON, Grand Rapids.
To Camp Upton, N. Y., base hospital, from Camp Dodge, Capt. A. E. SMITH, Minneapolis.
To Camp Wheeler, Ga., base hospital, from Camp Shelby, Capt. A. E. BENJAMIN, Minneapolis.
To Fort Benjamin Harrison, Ind., from Cincinnati, Lieut. A. A. TOFTE, Pine City.
To Fort McDowell, Calif., Capt. A. PETERSON, Rochester.
To Fort McPherson, Ga., from Fort Oglethorpe, Major H. M. MORTON, Minneapolis. For instruction, from Camp Pike, Lieut. S. V. HODGE, Minneapolis.
To Fort Sheridan, Ill., base hospital, from Camp Grant, Capt. E. BOECKMANN, St. Paul; Lieuts. C. LEMBKE, C. H. ZANDER, St. Paul.
To Fort Sill, Okla., Post Field, from Bellevue, Ill., Capt. G. T. AYRES, Ely.
To Fort Snelling, Minn., Lieut. J. C. WALKER, Jr., Rochester.
To Rochester, Minn., Mayo Clinic, for instruction, Lieut. B. A. DOGGETT, Rochester.
To Rockefeller Institute for instruction, from New Haven, Lieut. L. BAKER, Minneapolis. For instruction in the treatment of infected wounds, and on completion *to Camp A. A. Humphreys, Va.*, base hospital, from Fort Oglethorpe, Lieut. H. D. NEWKIRK, Minneapolis.
To Washington, D. C., Surgeon-General's Office, from Fort Sam Houston, Major A. R. COLVIN, St. Paul.
The following order has been revoked: *To San Antonio, Texas*, Kelly Field, from Garden City, Lieut. F. L. POWERS, Pipestone.

Mississippi

To Camp Crane, Pa., base hospital, from Fort Sill, Capt. J. T. IRBY, Enterprise.
To Camp Shelby, Miss., base hospital, from Camp Logan, Capt. E. F. HOWARD, Vicksburg.
To Fort Bayard, N. M., from Denver, Lieut. B. C. BERNARD, Indianola.
To Fort Oglethorpe, evacuation hospital, from Camp Zachary Taylor, Lieut. J. B. HIRSCH, Greenville.
To Hattiesburg, Miss., Mississippi Normal College, from Camp Shelby, Capt. J. R. TACKETT, Meridian.
To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Sherman, Ohio*, base hospital, from Camp Crane, Capt. J. CRISLER, Jackson.

Missouri

To Boston, Mass., from Camp Custer, Lieuts. O. P. McCARTNEY, Kansas City; C. A. ORR, Mendon.
To Camp Beauregard, La., base hospital, from Fort Riley, Lieut. O. R. CROOKS, Kansas City.
To Camp Crane, Pa., evacuation hospital, from Camp Dodge, Lieut. J. O'CONNELL, St. Louis. Mobile hospital, from Fort Oglethorpe, Capt. G. H. MORELAND Kansas City; from New Haven, Lieut. E. V. KRING, St. Louis. Surgical group, from Colonia, N. J., Capt. V. CADWELL, Poplar Bluff.
To Camp Gordon, Ga., base hospital, for instruction, from Fort Oglethorpe, Lieut. J. M. WILSON, Stoutsville.
To Camp Jackson, S. C., from Camp Custer, Capt. R. L. FOGLE, Otterville.
To Camp MacArthur, Texas, base hospital, Capt. W. E. YOUNT, Cape Girardeau.
To Camp McClellan, Ala., base hospital, for instruction, from Fort Oglethorpe, Lieut. J. D. POE, St. Louis.
To Camp Meade, Md., from Fort Sill, Major F. W. SHAW, Mount Vernon.
To Camp Sevier, S. C., base hospital, from Fort Oglethorpe, Capt. E. P. HAMILTON, Kansas City.
To Camp Shelby, Miss., base hospital, from Fort Oglethorpe, Lieut. F. B. SPENCER, Hannibal.
To Camp Sheridan, Ala., base hospital, from Fort Oglethorpe, Lieut. A. L. HEARST, Kansas City.
To Camp Upton, N. Y., base hospital, from Camp Grant, Lieut. C. D. SCOTT, St. Louis.

To Cincinnati, Ohio, from Fort Riley, Capt. J. MIDDLETON, Kansas City.
To Eastern Department, from Camp Upton, Lieut. H. J. WITTWER, St. Louis.
To Fort McPherson, Ga., from Lexington, Va., Lieut. W. J. BILLETER, Bynumville.
To Fort Oglethorpe, exacuation hospital, from Camp McClellan, Lieut. W. J. SPARHAWK, St. Louis; from Camp Sevier, Capt. W. H. MINTON, St. Joseph. For instruction, from Camp Pike, Capt. C. A. TUCKER, Springfield.
To New Cumberland, Pa., from Fort Oglethorpe, Lieut. J. H. WILLIAMS, Hume.
To New Haven, Conn., from Camp Jackson, Capt. O. L. SUGGETT, St. Louis; from Fort Benjamin Harrison, Lieut. F. R. DEHONEY, Fredericktown.
To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to his proper station,* Lieut.-Col. M. G. SEELIG, St. Louis.
To San Antonio, Texas, Kelly Field, from Camp Dick, Lieut. I. N. PARRISH, Polo.
The following order has been revoked: *To Jefferson Barracks, Mo.,* Lieut. R. HEREFORD, Ashley.

Montana

To Camp Colt, Pa., from Camp Custer, Lieut. J. R. McDOWELL, Intake.
To Camp Crane, Pa., evacuation hospital, from Camp Grant, Lieut. C. A. JOHNSON, Livingston.
To Fort Riley for instruction, Lieut. A. B. ECKERDT, Helena.

Nebraska

To Camp Abraham Eustis, Va., from Camp Sheridan, Lieut. W. J. McCRANN, Omaha.
To Camp Crane, Pa., base hospital, from Camp Travis, Lieut. J. D. McCARTHY, Omaha.
To Camp Zachary Taylor, Ky., as orthopedic surgeon, from Fort Riley, Lieut. L. K. STRATE, Hastings.
To Fort Oglethorpe, evacuation hospital, from Camp Beauregard, Capt. F. J. WURTELE, North Platte; from Camp Bowie, Capt. G. H. RATHBUN, Fremont.
To Indianapolis, Ind., from Rantoul, Lieut. N. L. CRISS, Omaha.
To Lake Charles La., Gerstner Field, from Fort Oglethorpe, Lieut. F. W. PLEHN, Scottsbluff.
To New Haven, Conn., Yale Army Laboratory School, from Fort Oglethorpe, Major H. E. EGGERS, Omaha.
The following order has been revoked: *To Fort Oglethorpe,* evacuation hospital, from Camp Jackson, Capt. W. N. ANDERSON, Omaha.

Nevada

To Camp Crane, Pa., Surgical Group from Camp Cody, Capt. L. V. SMITH, Reno.
To Fort Douglas, Utah, for instruction, Lieut. W. H. RILEY, Aurora.

New Hampshire

To Camp Upton, N. Y., base hospital, from Fort Oglethorpe, Lieut. F. E. SPEAR, Woodsville.
To Camp Sheridan, Ala., base hospital, from Fort Oglethorpe, Lieut. E. W. COATES, Concord.
To Dallas, Texas, from San Antonio, Capt. D. R. CHASE, Lebanon.
To Mineola, N. Y., Hazelhurst Field, for instruction, from Colonia, Capt. G. H. PARKER, Hanover.

New Jersey

To Camp A. A. Humphreys, Va., to examine drafted men for nervous and mental diseases, and on completion *to his proper station,* from Washington, Capt. G. PAYNE, Cedar Grove.
To Camp Crane, Pa., from Camp Zachary Taylor, Capt. N. W. CURRIE, Plainfield. Base hospital, from Camp Dix, Capt. F. R. CORSON, Atlantic City; from Camp Greene, Lieut. J. WILLIS, Jr., Jersey City. Evacuation hospital, from Camp Gordon, Lieut. R. J. VREELAND, Clifton. Mobile hospital, from Camp Lee, Capt. J. H. ORAM, Paterson.
To Camp Dix, N. J., from Camp Lee, Capt. C. J. AILPERIN, Newark.
To Camp Joseph E. Johnston, Fla., base hospital, for instruction, from Fort Oglethorpe, Lieut. T. SMITH, Sea Isle City.
To Camp Logan, Texas, base hospital, from Fort Oglethorpe, Lieut. L. D. WHITNEY, Belleville.
To Camp Sevier, S. C., base hospital, from Camp Gordon, Lieut. J. N. PANNULLO, Newark. Base hospital, for instruction, from Fort Oglethorpe, Lieut. P. A. D'ACIERENO, West Hoboken.
To Camp Shelby, Miss., to examine drafted men for nervous and mental diseases, from Washington, Capt. P. C. WASBURN, Cape May.
To Camp Sheridan, Ala., from Fort Oglethorpe, Lieuts. T. H. PLATT, Dunellen; J. J. LEVY, Ocean Gate.
To Camp Upton, N. Y., base hospital, from Fort Oglethorpe, Capt. F. R. HAUSSLING, Newark; Lieut. M. H. STEIN, Elizabeth; from Hoboken, Major L. O. TARLETON.
To Camp Wadsworth, S. C., as orthopedic surgeon, from Fort Oglethorpe, Lieut. F. J. T. WAS, Paterson. Base hospital, from Fort Oglethorpe, Capt. A. NELON, Jersey City.
To Camp Wheeler, Ga., base hospital, from Fort Oglethorpe, Lieut. A. UREWITZ, West Hoboken.
To Camp Zachary Taylor, Ky., as tuberculosis examiner, from Syracuse, Capt. G. E. HARHEN, Newark.
To Colonia, N. J., for instruction, from Camp Hancock, Capt. A. S. HARDEN, Newark.
To Fort Ethan Allen, Vt., base hospital, from Camp Dix, Major M. J. SYNNOTT, Montclair.
To Fort Monroe, Va., from New York, Lieut. H. F. WESTCOTT, Bridgeton.
To West Point, N. Y., from Syracuse, Lieut. J. WECHSLER, Jersey City.
Resignation of Lieut. C. E. BORN, West Hoboken, accepted
The following order has been revoked: *To Camp Crane, Pa.,* Surgical Group, from Fort McHenry, Capt. J. L. FEWSMITH, Newark.

New Mexico

To Boston, Mass., from Fort Oglethorpe, Lieut. M. McCAHILL, Albuquerque.
To Camp McClellan, Ala., as assistant to the division surgeon, Major H. R. BROWN, Albuquerque.

New York

To Arcadia, Fla., Carlstrom Field, from Fort Wayne, Mich., Major H. L. SCHELLING, Brooklyn.
To Boston, Mass., for instruction, from Fort Oglethorpe, Capt. T. FARNAM, New York.
To Camp A. A. Humphreys, Va., from Plattsburg Barracks, Lieut. W. C. THOMPSON, Plattsburgh.
To Camp Abraham Eustis, Va., from Eastern Department, Capt. F. W. HUNTER, Fort Totten.
To Camp Crane, Pa., base hospital, from Camp Abraham Eustis, Lieut. H. S. MARCLAY, New York; from Camp Greene, Capt. R. M. JONES, New York; from Camp Jackson, Major R. H. McCONNELL, New York; from Camp Meade, Capt. F. COONLEY, Staten Island; from Camp Sevier, Capt. W. E. BOWEN, Rochester; from Fort Douglas, Lieut. A. E. GORDIN, New York; from Fort Oglethorpe, Major H. L. K. SHAW, Albany; Capt. A. H. RODGERS, Corning; from New Haven, Capt. W. H. VEEDER, Rochester; from Syracuse, Lieut. D. BRUMBERG, Buffalo; from Williamsbridge, Major D. D. ROBERTS, Brooklyn; Capt. C. C. CORYELL, New York. Evacuation hospital, from Camp Lee, Lieut. I. J. RUSSELL, Setauket. Mobile hospital, from Camp Greene, Lieut. W. L. MUNSON, Granville; from Fort Oglethorpe, Lieut. B. HUGHES, New York. Surgical group, from New York, Capt. E. A. KING, New York.
To Camp Custer, Mich., base hospital, from Camp Jackson, Capt. C. EGGERS, New York.
To Camp Devens, Mass., base hospital, from Camp Jackson, Lieut. H. R. MIXSELL, New York.
To Camp Dix, N. J., base hospital, from Long Island City, Capt. A. L. BENEDICT, Buffalo. Base hospital, for instruction, Lieut. J. M. SCHAFFER, New York.
To Camp Gordon, Ga., base hospital, for instruction, from Camp Zachary Taylor, Capt. B. G. BLACKMAR, Brooklyn.
To Camp Greene, N. C., base hospital, from Camp Hancock, Capt. H. D. FURNISS, New York.
To Camp Hancock, Ga., from Lakewood, Lieut. P. J. WHITE, Ja., Green Ridge.
To Camp Jackson, S. C., to examine the command for nervous and mental diseases, from New York, Lieut. J. MARSHACK, New York.
To Camp Joseph E. Johnson, Fla., base hospital, from Camp Shelby, Capt. R. S. TAYLOR, Buffalo.
To Camp Lee, Va., from Fort Slocum, Major W. C. McKNIGHT, New York.
To Camp McClellan, Ala., base hospital, for instruction, from Fort Oglethorpe, Capt. C. E. ELKINS, Massena.
To Camp Meade, Md., from the Surgeon-General's Office, Capt. L. L. ROOS, New York. As camp surgeon, from Camp Benning, Major E. A. SOUTHALL, Buffalo.
To Camp Sevier, S. C., base hospital, from Fort Oglethorpe, Lieut. R. G. HAYS, Brooklyn.
To Camp Shelby, Miss., base hospital, from Fort Oglethorpe, Lieuts. M. H. BARSKY, M. SOLETSKY, New York. To examine drafted men for nervous and mental diseases, from Washington, Capt. W. R. WOODBURY, Rochester.
To Camp Sheridan, Ala., Capt A. J. HAMBROOK, Troy; from Fort Oglethorpe, Capt. A. MARK, Elmira; Lieut. F. M. CHAFFEE, Middlesex.
To Camp Travis, Texas, base hospital, for instruction, from Fort Oglethorpe, Capt. M. L. HAVILAND, Glen Falls.
To Camp Upton, N. Y., base hospital, Lieut. H. H. BAUCKUS, Buffalo; from Camp Custer, Capt T. F. FOLEY, Elmira; from Fort Oglethorpe, Capt. G. R. CRITCHLOW, Buffalo; from New York, Major H. S. BAKETEL, New York. Base hospital, for instruction, from Hoboken, Capt. J. E. GOLDING, Brooklyn.
To Camp Wadsworth, S. C., base hospital, from Camp Greene, Lieut. R. C. SCHLEUSSNER, New York; from Fort Oglethorpe, Capt. G. H. DILL, Utica; Lieut. H. M. COX, New York. To examine the troops for cardiovascular diseases, from Camp Gordon, Lieut M. J. RADIN, New York.
To Camp Wheeler, Ga., as division surgeon, Major H. R. GAYLORD, Buffalo. Base hospital, from Fort Oglethorpe, Lieut. A. C. FREEMAN, New York.
To Camp Zachary Taylor, Ky., from Army Medical School, Lieut. F. L. GATES, New York.
To Cape May, N. J., base hospital, from Camp Sherman, Lieut. J. G. MORRESSEY, Yonkers; from Fort Oglethorpe, Lieut. J. G. J. GRIMLEY, New York.
To Denver, Colo., from Camp Dix, Lieut. C. R. MILLER, Ogdensburg.
To Eastern Department, from Camp Upton, Capt. F. O. HUNTER, Fort Totten.
To East Norfolk, Mass., from Camp Devens, Lieut. E. M. POATE, New York.
To Fort Ethan Allen, Vt., from New Haven, Lieut. W. C. PENDILL, Huntington; from Syracuse, Capt. M. CAMPBELL, New York. Base hospital, from Camp Devens, Capt. F. W. SEYMOUR, Rochester; from Camp Dix, Capt. F. L. NELSON, New York; Lieut. J. T. FOWKES, Lafargeville.
To Fort McHenry, Md., from Camp Zachary Taylor, Major J. P. FISKE, New York.
To Fort Monroe, Va., from Fort Keough, Major J. B. COOKE, Cooperstown.
To Fort Oglethorpe, from Fort Porter, Lieut. A. B. FERGUSON, New York. Evacuation hospital, from Camp Jackson, Lieut. A. ROTH, Brooklyn; from Camp MacArthur, Lieut. I. E. SUMMER, Brooklyn. For instruction, Lieuts. E. L. FROST, Buffalo; W. D. EDWARDS, New York; from New Haven, Lieut. F. C. McCLELLAN, Canandaigua.
To Lakewood, N. J., from Fort Oglethorpe, Lieuts. J. BECKENSTEIN, Brooklyn; H. C. DORSEY, M. A. McIVER, New York. For instruction, from Army Medical School, Lieuts. R. A. CORBIN, New York; B. J. SLATER, Rochester.
To Lonoke, Ark., Eberts Field, as flight surgeon, from Rantoul, Capt. W. A. SCRUTON, New York.
To Mineola, N. Y., Hazlehurst Field, for instruction, from Austin, Capt. F. A. JOHNSON, Kingston; from Camp McClellan, Capt. J. J. KING, New York; from New York, Capt. J. D. RICHARDS, New York.
To New Haven, Conn., Yale Army Laboratory School, from Camp Custer, Major J. S. BILLINGS, New York; from Camp Dix, Major B. F. KNAUSE, Brooklyn. For instruction, from Lakewood, Lieut. H. T. HYMAN, New York.
To New York, Neurological Institute, for intensive training in neuropsychiatry, Capt. J. R. HARDING, Elmira. To give instruction, from Plattsburg Barracks, Capt. W. TIMME, New York.

To report to the commanding general, Southeastern Department, from North Charleston, Lieut. M. E. GREGG, Mottville.

To Rockefeller Institute for instruction, from New Haven, Lieuts. L. J. STRONG, W. E. ZIELINSKI, Buffalo. For instruction in the treatment of infected wounds, and on completion *to Camp Upton, N. Y.*, base hospital, from Fort Oglethorpe, Lieut. F. S. WETHERELL, Syracuse.

To Washington, D. C., Surgeon-General's Office, from Waynesville, N. C., Lieut.-Col. C. E. DAVIS, Albany.

To Waynesville, N. C., from Camp Grant, Capt. C. A. NEWCOMB, Newark.

To White Plains, N. Y., from Fort Sam Houston, Major J. I. RUSSELL, New York.

Honorably discharged on account of physical disability incurred in line of duty, Lieut. A. M. SARTORIUS, Brooklyn.

The following orders have been revoked: *To Camp Fremont, Calif.*, base hospital, from Camp Lewis, Lieut. A. G. DESANCTIS, New York. *To San Antonio, Texas*, Kelly Field, from Garden City, Lieut. M. GROLLMAN, Brooklyn.

North Carolina

To Camp Crane, Pa., surgical group, from Camp Wheeler, Major E. A. LOCKETT, Winston-Salem.

To Camp Jackson, S. C., base hospital, for instruction, from Fort Oglethorpe, Capt. N. D. ADAMS, Murphy.

To Camp Joseph E. Johnston, Fla., base hospital, from Camp Beauregard, Lieut. G. E. BOWDOIN, Wilmington.

To Camp Kendrick, N. J., from Camp Upton, Capt. L. D. FLOYD, Cerro Gordo.

To Rockefeller Institute for instruction, from New Haven, Capt. W. P. JACOCKS, Elizabeth City.

North Dakota

To Camp Crane, Pa., base hospital, from Fort Douglas, Lieut. W. S. ANDERSON, Grand Forks.

To Fort Oglethorpe, evacuation hospital, from Camp Sheridan, Capt. W. A. GERRISH, Jamestown.

To Fort Snelling, Minn., for instruction, from Camp Grant, Lieut. W. H. WITHERSTINE, Grand Forks.

Ohio

To Army Medical School for instruction, from Fort Oglethorpe, Capt. E. A. KLEIN, Norwood.

To Atlanta, Ga., Armory Building, from Fort Clinton, Major F. E. ARTAUD, Columbus.

To Camp Cole, Pa., from Camp Upton, Lieut. C. H. HARALSON, Mount Vernon.

To Camp Crane, Pa., base hospital, from Camp Travis, Lieut. F. W. McNAMARA, Youngstown; from Fort Oglethorpe, Lieuts. H. H. LOWE, Leesburg; W. E. HIGGS, N. N. MEYER, Youngstown. Evacuation hospital, from Camp Sherman, Capt. B. F. CURETON, Walhonding. Mobile hospital, from Fort Oglethorpe, Lieut. W. A. TEVELUWE, Cincinnati.

To Camp Custer, Mich., base hospital, for instruction, from Fort Oglethorpe, Lieut. E. R. MELLOTT, Toledo.

To Camp Grant, Ill., as assistant to camp surgeon, from Fort Oglethorpe, Lieut. G. A. MILLER, Hudson.

To Camp MacArthur, Texas, base hospital, for instruction, from Fort Oglethorpe, Capt. W. E. RANZ, Youngstown.

To Camp McClellan, Ala., base hospital, for instruction, from Fort Oglethorpe, Lieut. M. H. BOWERS, Perrysburg.

To Camp Meade, Md., from Camp Travis, Lieut. C. M. DOUTHITT, Athens.

To Camp Sevier, S. C., base hospital, from Fort Oglethorpe, Lieut. F. F. KRAMER, Cincinnati.

To Camp Sheridan, Ala., from Fort Oglethorpe, Lieut. K. C. EVANS, Payne.

To Camp Upton, N. Y., base hospital, from Camp Jackson, Capt. M. MILLIKIN, Hamilton.

To Camp Wheeler, Ga., to examine troops for cardiovascular diseases, from Camp Gordon, Lieut. H. B. WEISS, Cincinnati.

To Fort Benjamin Harrison, Ind., from Central Department, Lieut. W. B. KEATOR, Findlay; from Cincinnati, Lieut. E. D. HARPER, Guysville.

To Fort Ethan Allen, Vt., from Syracuse, Lieut. F. B. SNODGRASS, Kenton.

To Fort Oglethorpe, evacuation hospital, from Camp Zachary Taylor, Lieut. F. J. GALLAGHER, Cleveland. For instruction, Lieut. W. ADAIR, Lorain.

To Fort Ontario, N. Y., from Camp Gordon, Lieut. W. A. KOCH, Bucyrus.

To Fort Sam Houston, Texas, from Camp Beauregard, Capt. C. A. HOWELL, Columbus.

To Fort Sheridan, Ill., base hospital, from Camp Grant, Capt. W. A. MEDLIN, Cleveland; from Fort Des Moines, Lieut. H. L. PRICE, Toledo; from Fort Riley, Lieut. R. R. KERKOW, Hacksville; from Fort Snelling, Major H. Z. SILVER, Eaton.

To Fort Sill, Okla., Post Field, from Bellevue, Ill., Lieut. A. J. SHOEMAKER, Columbus.

To Fort Slocum, N. Y., from Camp Sherman, Capt. A. L. STEINFELD, Toledo.

To Hoboken, N. J., from Fort Oglethorpe, Capt. L. A. BREWER, Toledo. Base hospital, from Fort Oglethorpe, Lieut. J. F. WRIGHT, Toledo.

To New Cumberland, Pa., from Erie, Pa., Lieut. O. P. ANDREWS, East Liverpool.

To New York, Columbia University, from Eastern Department, Lieut. C. S. CAVETT, North Baltimore.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital, D. C.*, for instruction, from Fort Oglethorpe, Capt. F. B. LIVERMORE, Barberton.

To Wilberforce, Ohio, Wilberforce University, Lieut. M. L. CRAWFORD, Cleveland.

The following orders have been revoked: *To Fort Oglethorpe* for instruction, Lieut. H. C. WHITE, Columbus. *To New York*, Bellevue Hospital, for instruction, and on completion *to his proper station*, from Walter Reed General Hospital, Capt. A. H. SMITH, Marietta. *To San Antonio, Texas*, Kelly Field, from Garden City, Lieuts. C. H. VEROVITZ, Cleveland; F. E. HALL, Springfield.

Oklahoma

To Camp Gordon, Ga., from Southern Department, Capt. F. L. WALTON, Muskogee.

To Camp Sheridan, Ala., base hospital, from Fort Oglethorpe, Lieut. R. E. WAGGONER, Pawnee.

To Camp Upton, N. Y., base hospital, from Fort Oglethorpe, Capt. G. A. KILPATRICK, McAlester.

To Cape May, N. J., base hospital, from Fort Sill, Lieut. T. J. NUNNERY, Granite.

To Fort Ethan Allen, Vt., from Camp Devens, Lieut. T. M. TOLER, Wirt.

To Fort Oglethorpe, evacuation hospital, from Camp Cody, Lieut. H. P. PRICE, Tulsa. For instruction, Lieut. C. M. BLOSS, Okemah.

To Richmond, Va., from Hampton, Lieut. M. H. EDENS, Anadarko.

Oregon

To Camp Crane, Pa., base hospital, from Camp Lewis, Capt. E. A. SOMMER, Portland.

To Camp Dodge, Iowa, base hospital, from San Francisco, Capt. R. H. WELLINGTON, Portland.

To Fort Oglethorpe, evacuation hospital, from Camp McClellan, Lieut. R. F. JAMES, Portland.

To San Francisco, Calif., Letterman General Hospital, for instruction, Lieut. W. R. ANDERSON, Portland; from Camp Lewis, Capt. M. K. HALL, Grand.

Pennsylvania

To Azalea, N. C., from Camp Wadsworth, Capt. F. A. BRIDGETT, Philadelphia.

To Boston, Mass., from Camp Hancock, Capt. J. A. BROOKE, Philadelphia; from Fort Oglethorpe, Lieut. J. S. LOGAN, Pittsburgh. For instruction, from Camp Lee, Capt. L. VAN HORN, Philadelphia.

To Camp Crane, Pa., base hospital, from Army Medical School, Capt. C. E. LLEWELLYN, Philadelphia; from Fort Benjamin Harrison, Lieut. C. W. ESPY, Wilkes-Barre; from Fort McPherson, Capt. H. C. UPDEGRAFF, Pittsburgh; from Fort Oglethorpe, Capt. W. J. BAILEY, Connellsville. Evacuation hospital, from Camp Greene, Lieut. W. E. BROWN, Homestead. Mobile hospital, from Camp Wheeler, Capt. C. B. NOECKER, Scranton; from Camp Zachary Taylor, Lieut. P. T. HOPE, Mercer.

To Camp Gordon, Ga., base hospital, for instruction, from Fort Oglethorpe, Capt. W. C. WILSON, Clearfield.

To Camp Greene, N. C., base hospital, from Camp Beauregard, Lieut. H. C. WINSLOW, Meadville; from Camp Gordon, Capt. J. E. GOTWALS, Phoenixville; from Camp Hancock, Lieut. A. H. JAHN, Pittsburgh; from Camp McClellan, Capt. H. S. FISH, Sayre.

To Camp Jackson, S. C., base hospital, for instruction, Lieut. D. RIESMAN, Philadelphia.

To Camp Joseph E. Johnston, Fla., as tuberculosis examiner, from New Haven, Lieut. M. DEPTA, Mount Pleasant. Base hospital, from Camp Jackson, Capt. W. T. PYLE, Swissvale. Base hospital, for instruction, from Fort Oglethorpe, Capt. P. R. CORNELL, Easton.

To Camp McClellan, Ala., base hospital, from Fort Oglethorpe, Capt. J. H. RORKE, Reading.

To Camp Sevier, S. C., base hospital, from Biltmore, N. C., Capt. W. S. LONG, Reading; from Camp Hancock, Lieut. A. H. MURRAY, Sayre.

To Camp Shelby, Miss., base hospital, from Fort Oglethorpe, Capts. W. F. COPE, Easton; A. COWAN, Philadelphia; Lieuts. W. E. HODGSON, Glassport; W. F. WHITE, Wellsboro.

To Camp Sheridan, Ala., from Camp Colt, Lieut. F. D. LOHR, Derry; from Fort Oglethorpe, Capt. W. S. WRAY, Philadelphia.

To Camp Travis, Texas, from Orangeburg, Lieut. S. W. REEVES, Fawn Grove.

To Camp Upton, N. Y., from Camp Meade, Capt. R. M. ALEXANDER, Reading. Base hospital, from Camp Meade, Capt. G. B. MORELAND, Pittsburgh; from Fort Oglethorpe, Lieut. G. M. SPROWLS, Imperial; from Hoboken, Lieut. G. W. CONRAD, Johnstown.

To Camp Wadsworth, S. C., base hospital, from Fort Oglethorpe, Lieuts. R. C. SEIPEL, Easton; E. S. HUBBS, Philadelphia.

To Camp Wheeler, Ga., base hospital, from Camp Bowie, Lieut. E. M. ELLSWORTH, Wilkes-Barre; from Camp Sheridan, Capt. R. F. RIDPATH, Philadelphia.

To Camp Zachary Taylor, Ky., from Army Medical School, Major J. H. AUSTIN, Ardmore.

To Cape May, N. J., base hospital, from Camp Lee, Capt. G. A. VAN LENNEP, Philadelphia; from Fort Douglas, Capt. H. A. SPANGLER, Carlisle; from Walter Reed General Hospital, Capt. C. R. PALMER, West Chester; Lieut. W. B. SWARTLEY, Philadelphia.

To Eastern Department, from Camp Upton, Capt. B. P. STEELE, McVeytown.

To Fort Caswell, N. C., from Fort Oglethorpe, Lieut. H. M. GANGLOFF, Pittsburgh.

To Fort McPherson, Ga., for instruction, from Camp Sheridan, Capt. J. W. DIXON, Wilkinsburg.

To Fort Oglethorpe, base hospital, Major W. PEPPER, Philadelphia. Evacuation hospital, from Camp Gordon, Lieut. C. W. McELHENRY, Greenville; from Camp Jackson, Capt. W. ANDERSON, Pittsburgh; from Camp Shelby, Lieut. M. PLATT, Philadelphia; from Fort Thomas, Capt. E. L. DICKEY, Oil City. For instruction, Lieut. A. LEVY Philadelphia.

To Garden City, N. Y., to examine troops for cardiovascular diseases, from Lakewood, Lieut. L. N. GAY, Shamokin.

To Hampton, Va., Hampton Institute, Lieut. W. S. TAYLOR, Carlisle.

To Hoboken, N. J., from Camp Devens, Lieut. L. W. KOHN, Philadelphia; from the Surgeon-General's Office, Lieut.-Col. D. SILVER, Pittsburgh.

To Jefferson Barracks, Mo., from Camp Custer, Major J. D. MILLIGAN, Pittsburgh.

To Lakewood, N. J., from Fort Oglethorpe, Lieut. R. GOODMAN, Philadelphia.

To Lancaster, Pa., Franklin and Marshall College, from Camp Crane, Lieut. G. H. KIRKPATRICK, Wilkinsburg.

To Mineola, N. Y., Hazlehurst Field, for instruction, from Fort Oglethorpe, Capt. J. L. WAGNER, Reading.

To Rockefeller Institute, from Camp Upton, Capt. J. V. KLAUDER, Philadelphia. For instruction, from New Haven, Lieuts. J. A. COEN, Bristoria; L. W. WRIGHT, Williamsport.

To San Francisco, Calif., Letterman General Hospital, from Walter Reed General Hospital, Capt. R. J. HENDERSON, Bowmansville.

To South Bethlehem, Pa., Lehigh University, from Camp Crane, Lieut. L. L. PORCH, Johnstown.

To Washington, D. C., from Camp Meade, Lieut. W. J. CREIGHTON, Philadelphia. Surgeon-General's Office, from Walter Reed General Hospital, Capt. C. C. YOUNT, Philadelphia.

To Waynesville, N. C., as commanding officer, from Azalea, Major W. G. TURNBULL, Cresson.
To West Baden, Ind., from Lakewood, Major W. H. THOMAS, Philadelphia.
To Whipple Barracks, Ariz., from Fort Bayard, Major R. BEW, Gettysburg; from New Haven, Lieut. H. A. KIPP, Pittsburgh.
The following orders have been revoked: *To Camp Wadsworth, S. C.*, base hospital, from Fort Oglethorpe, Lieut. J. J. SWEENEY, Heckscherville. *To San Antonio, Texas*, Kelly Field, from Garden City, Capt. W. L. SCOTT, Joffre.

Porto Rico

To Camp Las Casas, P. R., from Cayey, P. R., Capt. A. C. SMITH, Henry Barracks.

Rhode Island

To Camp Crane, Pa., mobile hospital, from Camp Sevier, Capt. C. E. HAWKES, Providence.
To East Norfolk, Mass., from Camp Devens, Lieut. C. H. GANNON, Howard.
To Fort McPherson, Ga., for instruction, from Fort Oglethorpe, Lieut. P. H. RUSHTON, Providence.

South Carolina

To Camp Bowie, Texas, base hospital, from Fort Oglethorpe, Lieut. W. H. PRICE, Charleston.
To Camp Sheridan, Ala., from Fort Oglethorpe, Lieut. B. D. CAUGHMAN, Columbia.
To Camp Upton, N. Y., base hospital, from Camp Custer, Capt. L. PETERS, Columbia.
To Corpus Christi, Texas, from Fort Oglethorpe, Lieut. B. T. SHARPTON, Clarks Hill.
To Fort Oglethorpe for instruction, Lieut. I. J. CAMPBELL, Clover.
To Fort Sill, Okla., base hospital, from Camp Custer, Lieut. D. V. MYERS, Spartanburg.
To Orangeburg, S. C., Lieut. S. C. CLOWNEY, Spartanburg.

South Dakota

To Fort Oglethorpe, evacuation hospital, from Camp Gordon, Capt. J. F. McKIE, Wessington.
To Fort Sheridan, Ill., base hospital, from Fort Riley, Lieut. W. P. COLLINS, Howard.
The following order has been revoked: *To Camp Crane, Pa.*, surgical group, from Camp Grant, Lieut. B. H. SPRAGUE, Huron.

Tennessee

To Camp Abraham Eustis, Va., from Camp Sheridan, Lieut. B. F. LORING, Union City.
To Camp Crane, Pa., base hospital, from Camp Lee, Lieut. J. L. BRYAN, Nashville; from Camp Zachary Taylor, Lieut. J. B. BLUE, Memphis. Mobile hospital, from Fort Oglethorpe, Capt. L. A. HAUN, Lieut. J. V. HENDERSON, Knoxville.
To Camp Greene, N. C., base hospital, from Camp Hancock, Lieut. N. H. GOLDBERG, Nashville.
To Camp McClellan, Ala., as sanitary inspector, Capt. J. M. LEE, Nashville. Base hospital, from Fort Oglethorpe, Lieut. S. BURCHART, Memphis.
To Camp Shelby, Miss., base hospital, from Camp McClellan, Lieut. R. M. YOUNG, Knoxville; from Fort Oglethorpe, Lieut. C. M. CHILTON, Memphis.
To Camp Sheridan, Ala., from Fort Oglethorpe, Lieut. J. D. CARLTON, Union City. Base hospital, from Fort Oglethorpe, Lieut. W. N. LYNN, Knoxville.
To Camp Zachary Taylor, Ky., base hospital, for instruction, from Jefferson Barracks, Major G. M. ELLIS, Chattanooga.
To Dansville, N. Y., from New Haven, Lieut. R. H. DENHAM, Lynnville.
To Fort Oglethorpe, evacuation hospital, from Camp Pike, Lieut. D. D. MONCRIEF, Chapel Hill.
To Mineola, N. Y., Hazelhurst Field, for instruction, from Fort Riley, Lieut. P. H. WOOD, Memphis.
To Pine Bluff, Ark., Branch Normal School, Lieut. J. M. GILL, Brownsville.
To Rockefeller Institute for instruction, from New Haven, Lieut. C. L. DAVIDSON, Lexington. For instruction in the treatment of infected wounds, and on completion *to his proper station*, from Fort Crockett, Lieut. J. E. BLAYDES, Nashville.

Texas

To Camp Abraham Eustis, Va., from Camp Custer, Lieut. L. PENROD, Gonzales; from Fort Oglethorpe, Lieut. G. A. PAGENSTECHER, San Antonio.
To Camp Bowie, Texas, Capt. J. A. KYLE, Houston. As sanitary inspector, Capt. T. R. BURNETT, Carrollton.
To Camp Custer, Mich., for instruction, from Fort Oglethorpe, Major G. HAMILTON, Houston.
To Camp Jackson, S. C., from Camp Custer, Lieut. J. H. McCOY, Tahoka; from Fort Oglethorpe, Capt. E. C. FOSTER, Whitt.
To Camp Logan, Texas, to examine drafted men, and on completion *to base hospital*, from Fort Oglethorpe, Lieut. R. W. DUNLAP, Palestine.
To Camp McClellan, Ala., base hospital, from Camp Bowie, Capt. W. W. FITZPATRICK, Paris.
To Camp Shelby, Miss., base hospital, from Camp Bowie, Lieut. C. H. BROOKS, Waco; from Camp MacArthur, Lieuts. E. W. RHEINHEIMER, El Paso; J. C. FALVEY, Humble.
To Camp Travis, Texas, base hospital, from Fort Oglethorpe, Lieut. J. O. BUTLER, Bandera.
To Camp Wheeler, Ga., base hospital, from Camp Shelby, Lieut. J. V. HOPKINS, Victoria.
To Cape May, N. J., base hospital, from Camp Hancock, Lieut. W. L. ASKEW, Amarillo.
To Charleston, S. C., from Camp Travis, Capt. J. M. F. GILL, Austin.
To Fort Bayard, N. M., from Denver, Capt. J. T. BERNARD, Dallas.
To Fort Monroe, Va., from Camp Bowie, Capt. R. E. BLEDSOE, Taylor.
To Fort Oglethorpe, evacuation hospital, from Camp Travis, Capt. T. D. FRIZZELL, Quanah. For instruction, Capt. W. B. HUNTER, Aransas Pass; from Corpus Christi, Lieut. J. D. CARROLL, Uvalde.
To Madison Barracks, N. Y., from Fort Oglethorpe, Lieut. R. E. HILBURN, Antelope.
To Mineola, N. Y., for instruction, from Fort Worth, Lieut. J. W. ELLIS, Killeen.
To New Haven, Conn., Yale Army Laboratory School, for instruction, from duty as a contract surgeon, Lieut. M. D. LEVY, Galveston.
To Rockefeller Institute for instruction, from New Haven, Capt. H. BUCHANAN-KINGSBURY, Fort Worth. For instruction in the treatment of infected wounds, and on completion *to Camp Wadsworth, S. C.*, base hospital, from Fort Oglethorpe, Capt. J. R. KIGHT, San Angelo.
To Tuskegee, Ala., Tuskegee Institute, Lieut. F. D. RAMSEY, Paris.
To Walter Reed General Hospital, Washington, D. C., from Camp A. A. Humphreys, Capt. H. E. REECE, Thayer.

Utah

To Camp Bowie, Texas, as assistant to the division surgeon, Capt. G. W. CLARKE, Springfield.
To Camp Crane, Pa., mobile hospital, from Camp Cody, Capt. C. E. DORLAND, Devils Slide.
To Cape May, N. J., base hospital, from Camp Fremont, Capt. A. R. IRVINE, Salt Lake City.
To Fort Riley for instruction, Lieut. W. T. HASLER, Provo.
To Fort Sheridan, Ill., base hospital, from Camp Cody, Lieut. R. M. BROWN, Ogden.
To report to the commanding general, Southeastern Department, from North Charleston, Capt. W. J. BARDSLEY, Park City.
To Rockefeller Institute for instruction, from New Haven, Lieut. P. S. HAGEMAN, Bingham Canyon.

Vermont

To Camp Jackson, S. C., from Greensboro, Lieut. B. D. COLBY, Sudbury.
To Camp Shelby, Miss., base hospital, from Fort Oglethorpe, Lieut. F. E. STEEL, Ja., Waterbury.
To Fort Ethan Allen, Vt., base hospital, from Camp Devens, Capt. F. E. CLARK, Burlington.
To Rockefeller Institute for instruction, from New Haven, Capt. G. H. PARMENTER, Montpelier.

Virginia

To Camp Bowie, Texas, base hospital, for instruction, from Fort Oglethorpe, Capt. A. L. TYNES, Staunton.
To Camp Crane, Pa., base hospital, from Fort Oglethorpe, Capt. J. C. MOTLEY, Abingdon.
To Camp Sheridan, Ala., from Fort Oglethorpe, Lieut. E. D. WELLS, Clifton Forge.
To Fort Oglethorpe for instruction, Lieut. R. H. BROCKWELL, Barnetts.
To Garden City, N. Y., from Atlanta, Capt. G. ROBERTS, Clarendon.
To Greensboro, N. C., Lieut. J. O. A. WEBB, Norfolk.
To Rockefeller Institute for instruction, from New Haven, Lieut. C. H. IDEN, Berryville.

Washington

To Boston, Mass., from Camp Custer, Capt. H. A. MOUNT, Waitsburg.
To Camp Fremont, Calif., base hospital, from Camp Lewis, Capt. W. E. JOINER, Seattle.
To Camp Lewis, Wash., Lieut. L. D. LONG, Seattle.
To San Francisco, Calif., Letterman General Hospital, for instruction, from Camp Lewis, Capts. W. S. DURAND, Everett; L. W. RENFRO, Seattle.

West Virginia

To Boston, Mass., for instruction, from Camp Lee, Lieut. R. J. WILKINSON, Huntington; from Camp Zachary Taylor, Lieut. J. C. SCHULTZ, Huntington.
To Camp Crane, Pa., from Fort Oglethorpe, Lieut. H. H. ESKER, Clarksburg. Surgical group, from Camp Beauregard, Lieut. R. U. DRINKARD, Wheeling.
To Camp Dix, N. J., base hospital, from Fort Oglethorpe, Capt. W. L. VAN SANT, Hinton.
To Camp Greene, N. C., base hospital, from Camp Wadsworth, Capt. M. B. KELLY, Wheeling.
To Camp McClellan, Ala., base hospital, from Camp Mills, Lieut. C. P. BURKE, Follansbee.
To Camp Sheridan, Ala., base hospital, from Camp Gordon, Capt. H. H. YOUNG, Charleston.
To Camp Upton, N. Y., base hospital, from Fort Oglethorpe, Capt. J. D. SCHMIED, New Martinsville.
To Fort Ethan Allen, Vt., base hospital, from Camp Dix, Major L. C. COVINGTON, Charleston.
To Fort Oglethorpe for instruction, Capt. L. K. CRACRAFT, Wheeling.

Wisconsin

To Boston, Mass., from Camp Custer, Lieut J. M. MECUM, Bagley.
To Camp Crane, Pa., base hospital, from Camp Dodge, Capt. E. L. MASON, Eau Claire; from Edgewood, Md., Lieut. W. P. MILLER, Milwaukee. Mobile hospital, from New Haven, Lieut. O. E. ISHMAEL, Mount Horeb.
To Camp Custer, Mich., base hospital, for instruction, from Fort Sheridan, Lieut. T. W. NUZUM, Janesville.
To Camp Fremont, Calif., as assistant to camp surgeon, from Camp MacArthur, Capt. C. M. MEYER, Milladore.
To Camp Joseph E. Johnston, Fla., base hospital, from Camp Jackson, Capt. S. G. PAKE, Hayward.
To Camp Shelby, Miss., base hospital, from Camp Custer, Lieut. R. E. FLYNN, La Crosse.
To Fairfield, Ohio, Wilbur Wright Field, from Mount Clemens, Capt. E. G. FESTERLING, Reedsville.
To Garden City, N. Y., from Americus, Ga., Capt. C. J. ROLLEFSON, Superior.
To San Antonio, Texas, Brooks Field, from San Diego, Capt. F. W. POPE, Racine.

CORRECTION

In THE JOURNAL for November 16, under "Commissions Offered and Orders to Duty on Acceptance," the name of E. J. MAIRS of Laredo, Mo., was incorrectly given as E. J. Hairs.

ORDERS TO OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Asst. Surg.-Gen. R. H. CREEL, proceed to Boston, Mass., and Portland, Maine, to investigate administration of quarantine service at those ports.

Asst. Surg.-Gen. H. R. CARTER, proceed to Galveston and Port Arthur, Texas, and New Orleans, to investigate the prevalence of disease in those places.

Surg. J. H. OAKLEY, proceed to Wyandotte, Mich., to investigate the public health value of a contemplated improvement.

Surg. J. W. KERR, return to Las Vegas, N. M., and on completion of work, rejoin station at Ellis Island.

Surg. G. M. CORPUT, proceed to Port Arthur, Texas, to investigate suspected case of yellow fever.

Surg. E. A. SWEET, en route to Washington, stop at Wyandotte, Mich., and Warren, Ohio, to investigate public health value of contemplated improvements.

P. A. Surg. H. F. SMITH, proceed to Washington, D. C., for duty in investigations of the epidemiology of the recent influenza epidemic.

Asst. Surg. H. S. MUSTARD, proceed to Philadelphia for duty with the Emergency Fleet Corporation.

Asst. Surg. R. P. SANDIDGE, proceed from Boston, Mass., to Hartford, Conn., via Fall River, Mass., and to Harrisburg, Pa., for duty in the suppression of the epidemic of influenza.

Asst. Surg. J. S. S. GARDNER, proceed to Warren, Ohio, to investigate the public health value of contemplated improvement.

Asst. Surg. H. E. SETTLE, relieved at Washington, D. C., proceed to Newport News, Va., for temporary duty in relief work.

Asst. Surg. C. E. GIBBS, report at the Hygienic Laboratory for duty in connection with investigations relative to the etiology, transmission and treatment of influenza.

Acting Asst. Surg. J. A. McDONALD, proceed to Houston, Texas, for duty in extracantonment sanitation.

Acting Asst. Surg. BYRON PARKER, proceed to West Point, Ga., for duty with children's bureau in physical examination of adolescent boys.

Acting Asst. Surg. ARTHUR R. PILLSBURY, proceed to Nova Scotia, New Brunswick and Prince Edward Island for the purpose of giving lectures on venereal disease control.

Physiological Pathologist C. W. HOOPER, proceed to Penniman, Va., for duty in investigations of T. N. T. poisoning.

Asst. Epidemiologist J. C. GEIGER, proceed from Washington to New York City for conference, thence to Little Rock, Ark., for duty in cooperation with the state board of health.

Asst. Director Educational Work N. P. GREEN, proceed to New York for conference with various advertising organizations in regard to venereal disease control.

Scientific Asst. GEORGE C. PECK, proceed to Delhi, N. Y., to investigate a dried milk product to ascertain its suitableness for use in the manufacture of reconstructed milk.

Scientific Asst. SAMUEL SAUNDERS, proceed to Raleigh, N. C., for duty in rural sanitation in Wake and Durham counties, N. C.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Meeting Deferred.—The officers of the Third District Medical Society have decided to postpone their meeting for this year on account of the disturbed condition of the profession.

Personal.—Dr. James W. Smith, who shot and killed his brother-in-law, Danny Shannon, October 16, was acquitted after four hours' deliberation, November 16, by a jury in Montgomery County, where the case was taken on a change of venue.——Dr. Robert B. Corney, Tucker, for three years penitentiary physician at the state farm, has resigned to enter the military service.

CALIFORNIA

Personal.—Dr. Manzanito B. Bolton, Quincy, has been appointed county physician of Plumas County.——Dr. Ralph L. Larsen, San Francisco, sustained a severe scalp wound and bruises in the overturning of his automobile near Rodeo.

Chinese Herb Man Sentenced.—Tom Shee Binn, whose activities as a practitioner in herbs without the formality of a drug license and who has been brought into police courts many times, is said to have been sentenced to a fine of $350 and to imprisonment for 180 days in jail, November 15. A part of the evidence in which the conviction was made was to the effect that he charged J. A. Dunn $780 for herbs to prevent Spanish influenza, and that Dunn, notwithstanding, died from the disease.

Ask That Physician Be Allowed to Remain.—November 15, the California State Board of Health telegraphed to the Surgeon-General of the Public Health Service protesting against the recall of the physicians attached to the service who were sent into the state to help combat influenza. It was said that conditions had not sufficiently improved to justify their withdrawal. There was general improvement, but a few communities were still asking for assistance. The total number of cases reported to the state board to the date mentioned was 146,023, and 1,761 cases were reported on that date. In San Francisco it was announced by the health officer that the situation would warrant the abolishment of the masks in about a week. There had been 23,409 cases in the city and 1,927 deaths.

COLORADO

Personal.—Dr. J. Wylie Jones, who has been in active service for more than a year and was seriously wounded, is now recovered and returned to duty.

Municipal Sanatorium for Denver.—A communication proposing a municipal sanatorium with a capacity of 100 beds, for Denver, was presented to the mayor and city council by the Denver Anti-Tuberculosis Society, November 12. The communication was referred to the committee on health for investigation. It states that there were in the city in 1917, 645 deaths from tuberculosis; 118 of these were contracted there, and that there were about 3,000 persons in Denver who were suffering from tuberculosis, who were financially unable to secure necessary treatment.

CONNECTICUT

Transfer Feebleminded.—Dr. Charles T. LaMoure, superintendent of the Mansfield State Training School and Hospital, has transferred to that institution the inmates of the former Connecticut School for Feeble-Minded at Lakeville.

State Society Meeting.—The eleventh semiannual meeting of the Connecticut State Medical Society was held at New London, October 3, in connection with the semiannual meeting of the New London County Medical Society. Among the subjects brought up for discussion were: Child Welfare Work and The Tuberculosis Problem in the Army.

Personal.—Dr. Louis J. Pons, Milford, has been appointed medical examiner (coroner) of New Haven County, to succeed Dr. William J. H. Fischer, Milford, who has entered the military service.——Dr. Julius G. Henry, New Haven, has been appointed city epidemiologist.——Dr. Arthur S. McQueen, Branford, has been appointed medical examiner (coroner) for the district, to succeed Dr. Charles W. Gaylord, deceased.

GEORGIA

Personal.—Dr. Lorick T. Pattilo, Moultrie, county health commissioner of Colquitt County, has resigned.

Legislation on Public Health Subjects.—At the last session of the legislature four important health measures were passed. Two of these relate to the prevention of venereal disease, one to the prevention of ophthalmia neonatorum and one to the establishment of sanatoriums for tuberculosis patients in small cities, and jointly by small cities and counties. The first law is entitled "An act to penalize those who solicit for the purpose of prostitution," etc., and makes it a misdemeanor to make any such solicitation by any means whatever or to convey by automobile or otherwise any person in connection with such solicitation. Any one convicted under the act who is operating an automobile or other conveyance for hire immediately forfeits his license for such conveyance, and no license to operate a public vehicle can thereafter be obtained. The second law names syphilis, gonorrhea and chancroid as venereal diseases, declares them infectious, communicable and dangerous to public health, and is entitled "an act relating to venereal diseases, to require the reporting of cases thereof, to penalize those who expose others to infection, to authorize the examination, treatment and isolation of persons infected therewith, to give the health authorities certain power over jails and prisons in connection therewith, to authorize the state board of health to promulgate rules and regulations relating thereto and to declare a penalty for the violation of the provisions of this act, or any rules or regulations prescribed thereunder or any rule or regulation passed and promulgated by the state board of health under the authority of this or any other act." Law No. 3 declares it a misdemeanor for any person attending a new-born infant to fail to provide prophylactic treatment against gonorrheal infection. The law states that: "it shall be the duty of any person who shall be in attendance on any childbirth to apply to the child such prophylactic treatment as may be prescribed by the state board of health to prevent blindness from gonococcus infection, and that any person who shall nurse or attend any

infant shall report any inflammation of the eyes of said child that shall develop within two weeks after birth to the local health officer or to a licensed physician." The law in reference to tuberculosis provides that: "Any cities in Georgia which have a population of not less than 15,000 inhabitants, or any cities of not less than 5,000 inhabitants located in a county which has a population of not less than 25,000 inhabitants, to establish and maintain, either alone or in connection with the county authorities of the county in which such city may be located, may jointly build sanatoriums for the treatment of this disease." The law was greatly needed to encourage the fight against tuberculosis in smaller cities as practically none of these now have means of treating tuberculosis patients locally. The management of the State Tuberculosis Sanatorium at Alto was given to the state board of health instead of to the board of managers originally constituted by the law establishing the institution.

INDIANA

Influenza.—November 20, it was announced that forty-two counties of the state had reported a total of 1,506 new cases of influenza, the largest number reported for twenty-four hours for two weeks. Among the cities reporting a recrudescence of the disease, in some of which the ban either had not been removed or was restored, were Gary, Greensburg, Brookville, Richmond, Logansport, Yorktown, Muncie and West Muncie, South Bend, Anderson, Fort Wayne, Columbia City, Bloomington, Terre Haute, Owensville, Bluffton, Goshen Berne, Wabash, Fairmount and Indianapolis. In a few places improvement is noted.

IOWA

County Election.—At the annual meeting of the Scott County Medical Association, held November 5, in Davenport, Dr. Roscoe P. Carney was elected president; Dr. Thomas D. Starbuch, vice president; Dr. Robert E. Jameson, secretary, and Dr. Sidney G. Hands, treasurer, all of Davenport.

Personal.—Dr. Elizabeth Speers-Gillette, Marshalltown, is reported to have been adjudged insane and committeed to the State Hospital at Independence.——Lieut. Milo O. Brush, Shenandoah, when about to sail for France, fell in New York fracturing his clavicle and is under treatment at the base hospital, Camp Upton.

KENTUCKY

Personal.—Dr. Louis W. Eckels, Jr., has been appointed medical inspector for the health department of Louisville.——J. C. Gilbert, Paducah, has been appointed a member of the state board of pharmacy, succeeding Dr. J. H. Martin, Winchester.

Senior Student Dies.—Kline V. Menefee, a senior student at Ohio-Miami Medical College, Cincinnati, aged 23, who had been working in Cincinnati during the recent epidemic of influenza, died at his home in Covington, November 4, from pneumonia, following influenza.

MARYLAND

Night Clinics at Hopkins.—Cooperating with medical officials of the United States government, night clinics have been inaugurated at the Johns Hopkins Hospital in the interest of social diseases. Tuesday and Thursday are set aside for women, and Wednesday and Friday for men.

Personal.—Dr. Homer E. Tabler, Hancock, is reported to be seriously ill with pneumonia.——At a meeting of the Hagerstown Medical Society, November 14, Dr. William D. Campbell, Hagerstown, was appointed a committee to urge on the mayor and city council the establishment of a thoroughly modern board of health.

Influenza Reappearing.—During the past week, new cases of influenza have made their appearance in Baltimore, in several instances death resulting from pneumonia. However, the number is so far not alarming and has not caused the officials at the health department to feel that there will be a fresh outbreak in the city. They are carefully keeping in touch with the situation to be ready to act in any emergency.

MASSACHUSETTS

Medical Student Dies.—William H. Moynihan, Jacksonville, Fla., a student at the University of Maryland, Baltimore, aged 31, formerly medical superintendent of the department of correction, New York City, and later a resident of Jacksonville, Fla., died in that city, October 15, from pneumonia.

Personal.—Dr. Charles E. Donlan, Boston, was reinstated as superintendent of the Long Island Hospital, November 14, by order of Judge Murley of the East Boston Court, who found that Dr. Donlan had been removed illegally by the infirmary trustees, June 21.——Dr. Anna E. Steffen has been appointed resident physician at the Long Island Hospital, to succeed Dr. Llewellyn H. Rockwell, Boston, resigned to enter the military service.——Dr. William B. T. Smith, Bondsville, sustained a fracture of the skull and internal injuries when his automobile plunged over a 20-foot enbankment, near Palmer, November 9. He is under treatment in the Springfield Hospital.

Child Conservation.—The September-October, 1918, number of *The Commonhealth*, the monthly bulletin of the Massachusetts State Department of Health, is a child conservation number. It contains a series of interesting articles on various phases of child care, including the report of the first year's work of the committee on child conservation of the department, by William J. Gallivan, M.D.; the report of the secretary, Richard M. Smith, M.D.; the report of the child welfare supervisors, by Pansy V. Besom, chief; the report of the child welfare department of the woman's committee of the Massachusetts Council of National Defense, by Gertrude W. Peabody, vice chairman, and the following articles: The Part Good Obstetrics Plays in Child Welfare, by Robert L. DeNormandie, M.D.; Infant Feeding, by Richard M. Smith, M.D.; Diet of Older Children, by Fritz B. Talbot, M.D.; The Care and Development of Children, by J. Herbert Young, M.D.; the Importance of School Hygiene in the Scheme of Child Conservation, by Taliaferro Clark, M.D.; Mental Hygiene for Children, by L. F. Emerson, Ph.D.; The Cost of a Well Baby, by Mary Beard, R.N., besides editorial matter and the usual information about communicable diseases, including venereal diseases, vital statistics, etc.

MONTANA

Chiropractor Convicted.—L. J. Certain, Miles City, charged with practicing osteopathy under and by the name of chiropractic, is said to have been found guilty and fined $200. It was brought out in the trial that the defendant had been given instruction and warning, and had been given every opportunity to obtain a license, but had continued to practice without a license.

Hospital News.—An emergency hospital for the reception of influenza patients was opened in the school house in East Helena, November 9. Nursing is under the care of the local Red Cross officials.——Dr. W. Lynn DuBois has purchased a house in Conrad, which has been remodeled and equipped for a private hospital.——Kalispell has secured the Crescent Hotel as a hospital for influenza cases.——Plans have been drafted by the officials of the state university for the erection of a permanent hospital on the campus at Missoula, with accommodation for fifty patients.

Influenza.—November 18, the secretary of the state board of health reported that there were about 8,000 cases of influenza in the state. The situation was such in some districts that the secretary requested the Surgeon-General to allow to remain the physicians of the service sent to the state to aid in combating the epidemic. The Surgeon-General answered that the physicians might remain until December 1 if necessary. Among the places where the situation was bad was Saco, to which place the secretary of the state board went on the date named to take charge, Butte, Missoula, Malta, Geyser, where a physician was needed, and Helena.

NEW JERSEY

Personal.—Lieut. Joseph Watson Martindale, M. C., son of Joseph Martindale, a Camden physician, was wounded during the offensive at Soisson and is convalescing at the Cape May base hospital.

NEW MEXICO

Public Health Administration.—Under department orders of Sept. 16, 1918, Surgeon J. W. Kerr of the Public Health Service began a survey of sanitary organization and administration in the state with the idea of promoting health matters during the war. In his report in *Public Health Reports*, Nov. 15, 1918, a summary is given of the health laws of the state which shows that while the state board of health was organized and given powers of a character to insure an effective administration of health matters within the state, owing to an absence of appropriations to carry out any health regulations the matter has been entirely neglected, the only work of the state board being the atten-

tion given to enforcing the medical practice act. All efforts to enforce sanitary regulations throughout the state, therefore, depend on the local authorities. The report states: Little additional legislation is required except that the laws requiring the reporting of births and deaths should be amended somewhat. As a means of defraying the expenses of keeping these records he suggests that fees for marriage licenses be increased and set aside for this purpose. In a long list of recommendations submitted to meet the urgent need of improved health conditions in New Mexico, the chief features are that the present state board of health and medical examiners be designated in law as a state board of medical examiners and that its duties relate to the enforcement of acts to regulate the practice of medicine; that a state department of health be created to exercise all the powers and perform all the duties in respect to health imposed by law on the present board; that the department of health consist of a commissioner of health and a public health council, the commissioner to be paid an adequate salary and devote his whole time to the work.

NEW YORK

Personal.—Dr. William G. Bissell of Buffalo has been chosen president of the New York State Board of Medical Examiners.

OHIO

Personal.—Dr. R. E. Bushong, for eight years assistant superintendent of the State Hospital, Athens, has been appointed acting superintendent of the Dayton State Hospital, to succeed Dr. Erl A. Baber, Dayton, who has been granted an indefinite leave of absence.——Dr. Amon E. Canfield, Toledo, has been appointed local surgeon for the New York Central Lines at Air Line Junction.

Sanitary Unit Plan Urged.—The state board of health has proposed a method of achieving a rapid improvement of sanitary conditions in crowded industrial localities by the organization of sanitary districts, through which the various units now acting independently may adjust their conditions and proceed with a comprehensive program in which the interests of all will be safeguarded. This plan is especially proposed for the lower Mahoning Valley.

Typhoid Fever in the State.—The reported cases of typoid fever in Ohio, in October, were 324 as compared with 344 in October, 1917, and 757 in October, 1916. The September total for this year was nearly 150 cases greater than for September, 1917. The state health officials consider the educational campaign, to reduce the prevalence of typhoid fever in 1918, practically over. There are now being compiled statistics which will give an accurate report on what has been accomplished.

Influenza.—Recurrent outbreaks of influenza throughout the state, chiefly in the rural districts and smaller places, are attributed by the state health officials to premature relaxation of local closing regulations. These outbreaks after conditions had apparently been restored to normal are delaying the final extinction of the epidemic, which caused, up to November 25, an estimated total of 600,000 cases and 12,000 deaths in Ohio. Among places reporting a recrudescence of the disease in greater or less degree are Portsmouth, Newark, Columbus, Cincinnati, Bellaire and New Philadelphia. At Youngstown and Lima the disease was reported to be abating. Out of 1,000 inmates in the state hospital at Lima there were 217 cases and only seven deaths. In this connection the state health department says the epidemic shows up the weakness of health organization in Ohio. There are too many separate health organizations and not enough cooperation and general supervision. Many small communities, town and country, have health boards and health officers, but are too small to support adequate and efficient health departments. Thus, eighty cities, 700 villages and nearly 1,400 townships have their own health officers, but have no adequate supervision by the state. The remedy is to group small districts into larger ones capable of maintaining adequate health service. In the present epidemic this has caused additional work for the state authorities, with consequent delay, and perhaps needless loss of life.

OREGON

Personal.—Dr. James D. Plamondon, staff physician of the Oregon State Hospital for the Insane, Salem, has been appointed superintendent of the Eastern Oregon Hospital for the Insane, Pendleton.

Academy Meeting.—At the meeting of the Portland Academy of Medicine held, November 14, the system which has made possible the examination of 73,238 drafted men with 504 rejections for tuberculosis was described by Major James Matson, M. C., U. S. Army, of the tuberculosis examination board of Camp Lewis, Washington, D. C. The following officers were elected: president, Dr. Edward P. Geary; vice presidents, Drs. George Ainslie and Albert E. MacKay; secretary, Dr. J. Earle Else, and treasurer, Dr. J. C. Elliott King.

PENNSYLVANIA

Personal.—Dr. Charles M. Rickert, Millersburg, has resigned as assistant chief medical inspector.

State Hospital at Selinsgrove.—A new $1,000,000 state hospital will be erected in Selinsgrove in the spring. The state commission has decided on the immediate purchase of lands held under option for this purpose. Dr. Charles S. Aitkens is chairman of the commission.

Influenza Increasing.—The state department of health, November 21, announced that numerous flare-up cases of influenza have been reported in the last two days and an increased number of deaths have occurred in Erie, Johnstown, New Castle, Uniontown, Wilkes-Barre and Allentown. Steps have been taken to reimpose closing orders. The total number of deaths from influenza and pneumonia since October 1 throughout the state is 42,635.

Personal.—Lieut. Frederick B. Shaffer, Somerset, has been reported wounded in the head.——Lieut. Charles C. Ryan, Republic, Fayette County, has been reported as slightly wounded.——Lieut. William Edwin Park, New Milford, Susquehanna County, has been reported wounded, degree undetermined.——Dr. Charles M. Rickert, Millersburg, has been appointed assistant chief medical inspector of the state department of health, to succeed Dr. John J. Mullowney.——Dr. Silas D. Molyneux, Sayre, began his duties as surgeon-in-chief of the Cottage State Hospital, Blossburg, succeeding Dr. William A. DeWitt, Blossburg, deceased.——Capt. Thomas R. Cagion, M. C., Wilkes-Barre, who was wounded in the knee during the Marne fighting, is returning home and will not be able to resume duty in the war zone for some time.——Dr. Mariam E. K. Frisbie, South Williamsport, has been appointed medical supervisor of the state hospital at Somerset to succeed Dr. John S. Marian, who resigned to enter military service.

Philadelphia

Jefferson Students Drop Barracks.—Acting under permission from the authorities of the War Department, Jefferson Medical College will abandon the barracks program and permit the students to lodge at their fraternity houses and dwellings.

Work of the Pennsylvania Hospital Unit.—The Pennsylvania Base Hospital, Unit No. 10, organized in this city as soon as the United States entered the war and sailed overseas, May 18, 1917, with a personnel of 265 physicians, nurses, attendants and orderlies, has been stationed at Traporte, and has treated 78,000 wounded men with a mortality of only 300.

Personal.—Lieut.-Col. James Reid Martin, M. R. C., with the One Hundred and Ninth Infantry Medical Corps, and a former chief resident physician of Jefferson Hospital, was severely burned about the eyes by mustard gas, September 9, during the defense at Chateau Thierry.——Dr. Cornelius T. McCarthy, first lieutenant, Medical Corps, attached to the British army, is recovering from epidemic influenza, in London, England. He was the first American physician to be honored with the British military cross and has been cited twice by the British government. The second time he received a bar to be attached to the cross. He contracted influenza while taking charge of the base hospital in France.——Dr. Bernard Kohn has qualified before the Civil Service Board for director of Public School Medical Inspectors of the Board of Health.——Lieut.-Col. Richard H. Harte, M. R. C., director of the Pennsylvania Base Hospital, Unit No. 10, one of the first American surgical organizations to arrive in France, has just returned home.——Lieut. Andrew Knox, M. R. C., U. S. Army, has been awarded the military cross for attending wounded under heavy machine gun and artillery fire, during the taking of the city of Lille. Lieutenant Knox was attached to the One Hundred and Fifteenth London Regiment, civil service rifle British Expeditionary Forces, although he was a member of the American Army.

SOUTH CAROLINA

Work on Hospital Building Begun.—Work on the addition to the Greenville City Hospital has been commenced. The building when completed will have cost about $125,000.

SOUTH DAKOTA

District Association.—The Third (Madison) District Medical Society of South Dakota, which was organized, July 31, at Ramona, held its annual meeting at Madison, October 16, and elected Dr. Henry H. Frudenfeld, Madison, president, Dr. Blake S. Allison, Madison, vice president, and Dr. John C. Baker, Ramona, secretary-treasurer.

WASHINGTON

To Fight Influena in Alaska.—The steamer *Spokane* left Seattle, November 19, bearing ten physicians, also nurses and medical supplies for the Alaskans suffering from Spanish influenza. Surg. Emil Krulish, U. S. P. H. S., is in command of the party.

Physicians for Alaska.—November 12, a call was issued to the officers of county medical societies throughout the state for volunteer physicians to go to Alaska to help in caring for influenza patients. The call came from the state commissioner of health and the United States Public Health Service.

Personal.—Dr. Charles S. Bumgarner, Davenport, has been appointed health officer of Lincoln County, to succeed Dr. Orville L. Adams, who has resigned to enter the military service. Dr. Adams is at present ill with influenza at the Deaconess Hospital, Spokane.——Dr. Wilson A. Olds, Jr., Addy, is reported to be critically ill with pneumonia.——Drs. Edward P. M. Condon and J. P. Driscoll, Pasco, who have been ill with pneumonia, are reported to be convalescent.——Dr. James H. Ragsdale, health officer of Wapato, has resigned.

Hospital Allowed to Increase Charges.—As the result of an investigation of facilities for handling industrial accident cases in Seattle and Tacoma, the state medical aid board has ordered a radical readjustment of hospital fees under the first aid law. Instead of the $14 a week formerly allowed hospitals for the state industrial accident cases, the medical aid board is now allowing a charge of $18 a week, and has furthermore authorized the chairman of the board to allow this additional fee in hospital in any other locality operating under similar conditions.

WEST VIRGINIA

Arrests for Narcotic Act Violations.—Dr. Thomas L. Nutter and Chesley R. Peck, Clarksburg, and W. A. Dosman, a druggist, are reported to have been arrested at Clarksburg charged with selling narcotics to addicts. After a preliminary examination they were held under individual bonds of $5,000, before the federal grand jury at the coming term at Philippi.——A physician and druggist of Grafton have also been arrested charged with violation of the narcotic act.

Personal.—Dr. S. Marion Steele has been appointed health officer of Moundsville, to succeed Dr. John H. Luikart, who has resigned to enter the military service.——Dr. John W. Ruckman, Rosbys Rock, is reported to be seriously ill with spinal meningitis following influenza.——Drs. William J. Judy and Claude M. Keever, Belleville, are reported to be seriously ill.——Dr. Herbert E. Sloan, Clarksburg, has been appointed a member of the West Virginia State Health Council, to succeed Dr. Floyd F. Farnsworth, Frenchton, resigned to accept the position of director of the division of venereal diseases in the state department of health.

CANADA

The National Sanitarium Association.—At the beginning of the war the daily average number of patients in the institutions of the National Sanitarium Association of Canada was 485. Today it is 688. The expenditure for maintenance has advanced from $275,000 annually to $510,000; and the cost for the present hospital year will probably amount to $585,000. The per capita cost in the free hospitals in Muskoka and Weston has jumped from $10.50 per week to $14.52 per week.

Personal.—Dr. Malçolm M. Crawford has returned from overseas to Toronto, where he will reengage in private practice.——Col. John T. Clarke of the permanent medical service in Canada has gone to Siberia.——Prof. D. Fraser Harris has completed the history of the medical aspect of the great disaster in Halifax, N. S., Dec. 6, 1917.——Dr. John R. Shannon has been elected surgeon-in-chief of the Manhattan Eye and Ear Hospital, New York. He was formerly of Kingston, Ont.——Dr. C. Denton Holmes, Victoria, B. C., medical officer of the Saanich School Board, British Columbia, has tendered his resignation owing to pressure of work in connection with the Invalided Soldiers' Commission.——Lieut.-Col. Donald McGillivray, Toronto, has resumed private practice. He was latterly on the board of consultants. Lieut.-Col. Harold C. Parsons, Toronto, has succeeded him.——Dr. J. Mair Robertson has ceased to be a member of the Medical Board Center, Vancouver, B. C.——Major Horace W. Coates, C. A. M. C., has severed his connection with the Vancouver Military Hospital and has been appointed sanitary officer for the Vancouver military area.——Lieut.-Col. Cameron A. Warren, Toronto, is in command of the Sixteenth Canadian Field Ambulance with the Canadian Siberian Force.——Capt. Harry Whytock, C. A. M. C., was invested with the Military Cross at Buckingham Palace recently by His Majesty, King George.——The Military Cross has been awarded to Capt. John Gagen Lee, Toronto, now with the Imperial Army, but formerly with the C. A. M. C.

GENERAL

Medical Society Meeting Postponed.—Major James L. Andrews, M. C., U. S. Army, formerly chief of the department of health of Memphis, Tenn., announces that the annual meeting of the Tri-State Medical Society of Arkansas, Mississippi and Tennessee will not be held this year, owing to the war conditions and the outbreak of influenza.

Bequests and Donations.—The following bequests and donations have recently been announced:

The New York Hospital, $25,000 as a memorial to his father, by the will of Gerard Beekman.

Post-Graduate Medical School and Hospital, New York City, $25,000 by the will of Frederick Mead.

The Public Health Association and Influenza.—The American Public Health Association has made exhaustive studies of influenza, fearing the recurrence of the epidemic, and bearing in mind that during the original influenza epidemic from 1890 to 1893, the disease was more severe in the second year than in the first. At the coming annual meeting of the American Public Health Association, to be held in Chicago, December 9 to 12, with headquarters in Hotel Morrison, every effort will be made to bring out all the available information regarding the management of epidemic influenza. Among the papers to be presented at this meeting are the following:

Etiology of Influenza, Major William H. Welch, Baltimore; Dr. William H. Park, New York City; Lieutenant-Commander Keegan, and others.

Mobilization of Medical and Nursing Forces, Asst. Surg.-Gen. Joseph W. Schereschewsky, Pittsburgh; Dr. William C. Woodward, Boston, and others.

Influenza and Pneumonia Vaccines, Dr. Edward C. Rosenow, Rochester; Dr. George W. McCoy, Washington, D. C.; Dr. Timothy Leary, Boston, and others.

The Use of Serums in Influenza, Drs. McGuire and Redden; Dr Herman E. Hasseltine, Washington, D. C., and Dr. Joseph Goldberger, Washington, D. C.

The Face Mask, Col. Charles Lynch, M. C., U. S. Army, and Dr. George H. Weaver, Chicago.

The Value of Open-Air Treatment, Surg.-Gen. William A. Brooks, Boston, Massachusetts State Guard.

Organization of State and Federal Forces in Epidemics, Asst. Surg.-Gen. Albert W. McLaughlin, Chicago, and Dr. Eugene R. Kelley, Boston.

History and Statistics of the Epidemic, Asst. Surg.-Gen. Benjamin S. Warren, Washington, D. C.; Dr. William H. Guilfoy, Dr. W. H. Davis, Dr. Lee K. Frankel, New York City, and others.

Reference committees will be appointed who will report on the various phases of epidemic influenza both at the annual meeting and during the year 1919. While extensively devoted to influenza, the program also contains papers on other aspects of public health; mental hygiene, industrial hygiene, social problems, sanitary engineering, etc.

Child Labor Day.—Child Labor Day will be observed throughout the United States, January 25, in synagogues; January 26, in the churches, and January 27, in the schools, according to a bulletin of the National Child Labor Committee. The Children's Bureau of the Department of Labor is arranging to have reports from its field workers available for programs in churches, schools, clubs and other organizations. In this connection the Children's Bureau has issued a bulletin announcing a Back-to-School Drive, the object of which is to return to the schools and keep there the children who have deserted the schools for industry during

the war. The actual work of the drive, it is said, will be done through the Child Conservation Section of the Council of National Defense. Committees are now being formed whose duty will be first to study child labor and school attendance laws, and then get accurate lists of the children who have not returned to school. When the child has been compelled for pecuniary reasons to work, an attempt will be made to provide scholarships averaging about $120 a year, and by other methods funds will be provided to enable the children to continue their school courses. It has been the policy of the federal government to refuse to allow the employment of children under 14 in war work, or children between 14 and 16 on war work for more than eight hours a day and six days a week, or between 7 p. m. and 6 a. m. It is believed they should not be allowed to work in the less essential industries. Inquiries made by the Children's Bureau show that in many of the large cities of the country the percentage of children asking for permits to work has largely increased. In Washington this increase has amounted to 295 per cent., and in Wilmington, 61 per cent.

Third Resuscitation Commission Makes Report.—The third Resuscitation Commission, under the auspices of the Committee on Safety Rules and Accident Prevention of the National Electric Light Association met in New York, May 17, 1918, and has just issued its report. There were present P. A. Surg. E. F. Dubois, U. S. N. R. F.; Mr. W. C. L. Eglin, chairman of the committee of the N. E. L. A.; Drs. D. L. Edsall, Yandell Henderson, Joseph Schereschewsky, U. S. P. H. S., William H. Howell, Reid Hunt, secretary of the commission, and S. J. Meltzer, chairman of the commission; Prof. A. E. Kennelly, professor of electric engineering at Harvard and the Massachusetts Institute of Technology; Prof. G. N. Stewart; Lieut.-Col. E. B. Vedder, U. S. Army; Major F. G. Young, Ordnance Department, U. S. Army; Dr. C. A. Lauffer, medical director of the Westinghouse Company; Prof. E. Thomson of the General Electric Company, and conferees from various other interested organizations. Demonstrations of various methods of resuscitation were given and special devices exhibited.

STATEMENT OF IMPORTANT FACTS

In the discussion following the presentation of methods and evidence to the commission the following important facts were emphasized:

1. That in most accident cases no resuscitation apparatus is at hand for immediate use.
2. That reliance on the use of special apparatus diminishes greatly the tendency to train persons in the manual methods and discourages the prompt and persevering use of such methods.
3. That police officers or physicians often interfere with the proper execution of manual methods, in that they direct that the patient be removed in an ambulance to some hospital, thus interrupting the continuance of artificial respiration.
4. That in many hospitals the members of the staff are not all acquainted with the methods of artificial respiration.
5. That in medical schools instruction is not properly provided for students in the manual methods of artificial respiration.

RESOLUTIONS ADOPTED BY THE COMMISSION

In view of these facts the following resolutions were adopted by the commission.

1. The prone-pressure or Schäfer method of resuscitation is preferable to any of the other manual methods.
2. Medical schools, hospitals, fire and police departments, the Army and Navy, first aid associations, and industrial establishments in general, should be urged to give instruction in the use of the prone-pressure method of resuscitation.
3. Individuals who, from accident or any other cause, are in need of artificial respiration, should be given manual treatment by the prone-pressure method immediately on the spot where they are found. It is all important that this aid be rendered at once. The delay incident to removal to a hospital or elsewhere may be fatal, and is justifiable only where there is no one at hand competent to give artificial respiration. If complications exist or arise, which require hospital treatment, artificial respiration should be maintained in transit, and after arrival at the hospital, until spontaneous respirations begin.
4. Persons receiving artificial respiration should, as much as possible, be kept warm and the artificial respiration should be maintained till spontaneous breathing has been permanently restored, or as long as signs of life are present. Even in cases where there is no sign of returning animation, artificial respiration should be kept up for an hour or more.
5. A brief return of spontaneous respiration is not a certain indication for terminating the treatment. Not infrequently the patient after a temporary recovery of respiration stops breathing again. The patient must be watched and if normal breathing stops, the artificial respiration should be resumed at once.
6. Artificial respiration is required only when natural respiration has ceased. In cases of simple unconsciousness from any cause in which natural respiration continues, artificial respiration should not be employed without medical advice.
7. The commission recommends that in cases of gas asphyxiation, artificial respiration, whether given by a manual method or by special apparatus, should be combined when possible with the inhalation of oxygen from properly constructed apparatus.
8. With regard to the employment of mechanical devices for artificial respiration the commission feels that it ought not at present take a definite stand, either for or against any particular form of apparatus. However, the commission recommends, that the use and installation of apparatus should be confined, for the present, to properly equipped institutions under medical direction. The commission recognizes the great need of simple devices capable of performing artificial respiration reliably and efficiently. It therefore recommends a careful study of the problem, directed toward *the development of a reliable method appropriate for general adoption*. Such studies can best be carried on in properly equipped hospitals and laboratories which offer opportunities and facilities for critical observation and experimentation.

The commission consists of fifteen members. Fourteen approved the foregoing report without qualifications. The fifteenth member, Dr. Yandell Henderson, wishes to qualify his vote by a special statement:

STATEMENT OF DR. YANDELL HENDERSON

"While I concur in a considerable part of the report of the Resuscitation Commission I dissent from the statement in Resolution 8 recognizing 'the great need of simple devices capable of performing artificial respiration reliably and efficiently.'

"Devices which are excellent from the mechanical standpoint are now available and widely sold; but the evidence regarding them indicates clearly, I believe, that even if these devices were on the spot where several gassings or electrocutions occurred, and if all the victims were treated with them, except one who was given manual (prone pressure) treatment, this one would have much the best chance of recovery. In actual practice the apparatus is seldom right on the spot adjusted and ready. Critical time is lost, and thus in the above supposititious cases, as they actually occur, the only victim with any considerable chance of resuscitation (aside from those who recover spontaneously and are credited to the apparatus) is the one treated manually.

"Even more important is the fact, demonstrated now by universal experience, that when apparatus is known to be obtainable, it is sent for and the manual method neglected. Thus today the apparatus in public use is on the whole contributing very materially to decrease the saving of life."

The committee voted to continue its existence, electing as president, Dr. L. J. Meltzer; vice president, Dr. Yandell Henderson; secretary, Dr. Reid Hunt; treasurer, Mr. W. C. Eglin.

FOREIGN

Ether Day in London.—Ten years ago the trustees of the Massachusetts General Hospital set apart October 16 as "Ether Day" in commemoration of the first public demonstration and practical introduction of anesthesia in surgery. This year the day was celebrated in London by about twenty of the old house physicians and surgeons of the Massachusetts General Hospital who are attached to the various American base hospitals in England. Colonel Washburn, now in charge of American hospitals in England, presided as chairman, and General Winters and Sir William Osler were the guests of honor. Dr. Osler told the story of the introduction of surgical anesthesia. The original papers of Bigelow and Warren and those of William T. G. Morton were exhibited.

Pekelharing Souvenir Volume.—The fiftieth professional anniversary of Prof. C. A. Pekelharing, of the chair of physiologic chemistry and histology at the University of Utrecht, has been celebrated by the issuance of a *livre jubilaire* as the bulky fourth number of the second volume of the *Archives Néerlandaises de Physiologie de l'homme et des animaux*. There are nearly forty articles in the number, most of them

reporting results of original research, including Einthoven's "Sur les phénomènes électriques du tonus musculaire," Magnus' article on the muscular reflexes in decerebrated monkeys (in German); De Waard's "Ultrafiltration de petites quantités de liquide par la force centrifuge"; Halliburton's "The Rôle of Fats in Diet"; Beijerinck's report on a new biologic reaction with iron, "Chromogenic Yeasts," and De Haan's "Influence of Calcium Salts on Phagocytosis" (in French).

Fees for Medical Advice by Telephone.—A Netherlands medical journal announces that the physicians of Utrecht have decided to charge half the rates for an ordinary medical call for advice by telephone. The journal insists that this remuneration is not sufficient. The applicant—usually well to do, with his private telephone—is spared the trouble of a call at the doctor's office and waiting in the anteroom, and yet he gets the advice desired. It surely should be left to the physician, it remarks, whether he shall charge according to the service rendered, the half or the full amount of the ordinary office fee. The *Nederlandsch Tijdschrift* comments that however the matter is decided, the discussion will have an educational effect on the public, allowing it to be understood that a telephone call, compelling the physician to get up from his meal, his book, his repose, or his work is not a gratuitous extra but something that has to be paid for. The Prussian tariff recently promulgated provides for fees from about 40 cents to $1.25 for telephone advice.

Professor Henkel Acquitted.—The cable dispatches last August related that Prof. Max Henkel, of the chair of gynecology and obstetrics at the University of Jena, was being tried for the death of a woman on whom he had operated although warned by the nurses that the woman had not been prepared for an operation. He is said to have hastened the operation because a visitor was present, Prince Bernhard of Lippe, a layman, who likes to watch gynecologic operations. The *Nederlandsch Tijdschrift* now announces that the sentence acquitting Professor Henkel stated further "The admittance of lay persons interested in science to witness operations is to a certain degree customary and is not a matter for scandal." The medical faculty at Munich had published a statement taking the opposite view.

Municipal Milk Supply.—According to *Commerce Reports*, owing to the difficulty of securing a sufficient quantity of pure milk at a reasonable price at Wellington, New Zealand, steps have been taken by the city council to handle milk as a municipal undertaking. The council has obtained authority to make the milk business a monopoly in the city. The move is being observed with interest by the dairymen and by other municipalities.

PARIS LETTER

PARIS, Oct. 31, 1918.

The Fight Against Influenza

In view of a decided recrudescence of grip of grave degree with bronchopulmonary complications, the minister of the interior has asked the Académie de médecine to appoint a commission which will devise ways and means to combat the existing epidemic of this disease. This commission consists of Professors Netter, Bezançon, Achard, Vincent and Chauffard.

M. Albert Favre, undersecretary of state of the ministry of the interior has sent instructions to all prefects as to the best means for combating the grip. These instructions require that physicians must report cases of grip—a new regulation. If the epidemic continues to progress, all meetings or gatherings of large numbers of people, as in theaters, market places, movies, etc., must be interdicted. But, such measures are not to be taken until consultation is had with the Conseil départemental d'hygiène.

Influenza in Switzerland

Word has been received that the epidemic of so-called "Spanish" grip has broken out with renewed severity at Geneva. Therefore, the Commission d'hygiène has asked the Conseil d'Etat de Genève to close all theaters and movies, and to stop all public gatherings. A certain number of schools have already been closed and several other measures of a general nature have been ordered.

Sanatoriums in the Mountains

In various regions of France great activity has been displayed in the establishment of sanatoria in the mountains for the treatment of tuberculous soldiers. An interesting meeting was held recently in Dauphiné of representatives of several of these zones, on the suggestion of Dr. Perret. The medical profession, the universities and industry were represented at this meeting. The consensus of opinion was that in France locations for sanatoriums may be found that are far more desirable than the mountains of Switzerland (which are too humid), especially the region of the Hautes Alpes in southeastern France. High altitudes are available; the climate is exceptional, dry and sunshiny, like the Mediterranean climate. The commission selected several locations at 1,800 meters altitude.

Announcement is also made of the establishment of a sanatorium at a lower altitude on the plateau of Petites Roches, near Saint Hilaire on the outskirts of Grenoble. This establishment, located at an altitude of 1,100 meters, will be given over for the use of the Association métallurgique et minière contre la tuberculose, an association created under the auspices of the Comité des Forges de France. Mme. la baronne M. de Rothschild has founded at Mégève (épartement de la Haute-Savoie) a *station de cure* with several hotels, treatment and rest rooms and a *collège sportif* (gymnasium).

French Orthopedic Society

The Société française d'orthopédie has been organized. The president is Dr. Kirmisson, professor of clinical surgery and diseases of children on the Paris medical faculty, and the vice presidents are Dr. Auguste Broca, professor of operative surgery in the Paris medical faculty and Dr. Dénucé, associate professor in the Bordeaux medical faculty. The secretary-general is Dr. Nové-Josserand, associate professor in the Lyon medical faculty; the treasurer is Dr. Estor, clinical professor of surgery of children and of orthopedics in the Montpellier medical faculty. The first annual meeting of the society will be held in October, 1919, in the buildings of the Paris medical faculty at the same time as the Congrès de chirurgie. The following subjects will be discussed: (1) amputations in relation to subsequent prostheses; (2) spondylitis during the war; (3) treatment of pseudarthroses.

American Red Cross Activities

The American Red Cross has opened a new *Exposition de l'enfance* at Toulouse. At the opening exercises, the mayor of Toulouse, in the name of the city, extended thanks to the United States, and particularly to the American Red Cross which is continuing its beneficent work in France.

Extraction of Intrathoracic Projectiles

So far as intrapleural projectiles are concerned, there is general agreement that they should, as a rule, be extracted, and this rule is practically without exceptions. The discussion held at the recent Congrès français de chirurgie made it clear that this rule does not apply to intrapulmonary projectiles.

Dr. R. Grégoire of Paris extracts all intrapulmonary projectiles because of the complications which they may entail, sooner or later, anatomicopathologic examinations having shown that these foreign bodies are rarely aseptic. On the other hand, Dr. Duvergey of Bordeaux says that some exceptions must be made, depending on the gravity of the general condition of the patient. Dr. Viannay of Saint Etienne is in favor of immediate intervention; he operates as soon as the patient can be made ready, except when the projectile is small, because such do not give rise to any functional disturbance.

Dr. Petit de la Villéon of Bordeaux advises to refrain from operating at advanced stations. He says that surgery of the lung is surgery for base hospitals. Operative procedures at the front should be confined to the toilet of the chest wall, excision of dead tissues and structures, removal of pieces of clothing, excision of the tract of the projectile, reserving the invasion of the lung for a later period, the operation *à froid* being very benign as compared to operation *à chaud*. The conditions are practically the same as in the case of appendicitis—operating not at the height of the attack but during the interval. Whenever the general condition of the patient is not grave, he should be evacuated to the rear. When he arrives at the rear, is it necessary to extract all intrapulmonary foreign bodies? Petit de la Villéon says that the gravity and danger of the operation itself must be considered; all projectiles which can be removed with forceps with the aid of fluoroscopy should be removed. Whenever thoracopneumonotomy is required, it is necessary to decide whether, under the circumstances, it is better to operate or to refrain from doing so. Dr. Rocher stated that it is always difficult to decide on intervention when the intrapulmonary foreign body is small and occasions only slight symptoms, such as dyspnea on effort, or chest pains. If these pains are due to a chronic pleuritis or an intercostal neuralgia, then the extraction of the foreign body will, in all probability, leave the situation unchanged.

Bombardment of Hospitals by the Germans

In a letter addressed to M. Margaine, deputy from the département de la Marne, M. Clemenceau confirms the report that on October 1 a German aeroplane bombarded the hospitals of Châlons. This was not the first time that the enemy had broken the conventions which until then had been observed by all civilized nations, carrying death and destruction into the midst of hospital formations.

In connection with these facts it is interesting to note what was said recently by Mr. Orlando, the Italian premier, in the Italian chamber of deputies, to the effect that during the victorious naval operations at Durrazzo, the Austrian hospital ship had been respected and carefully protected.

Women Physicians Affiliated with the Medical Department of the French Army

Hereafter all French women who possess a medical diploma are eligible to appointment as "doctoresses adjointes au Service de Santé militaire," and will receive the pay, perquisites and allowances of an *aide-major* of the second class—a sublieutenant. Women medical students who have received twelve inscriptions may be appointed "assistantes du Service de Santé militaire," and receive the pay and allowances of a *médecin auxiliaire*. The minimum length of service will be six months, and these appointees will serve under the *médecins-chefs* of their formation, the directors of the Service de Santé militaire, and the superiors of the Service de Santé des armées.

International Scientific Representation

On the initiative of the Royal Society of London, delegates from the scientific academies of the allied countries will soon meet in London for the purpose of outlining the course to be pursued in the future with reference to the cooperation of subjects of the Central Powers in international scientific activities after the war. France will be represented at this conference by MM. Picard and Lacroix, permanent secretaries of the Académie des Sciences, and by MM. Bigourdan, Bailland, Haller, Lallemand and Moureu, members of the same academy.

Establishing a Chair of American Literature at the Sorbonne

In France American literature has been taught by the chair of English literature, never as a separate entity. Now, however, by decree of the minister of public instruction, a separate chair of American literature will be established at the Sorbonne under the professorship of M. Cestre, professor in the University of Bordeaux, and a former student of Harvard University, where he served during the session of 1917-1918 as exchange professor.

French Congress of Surgery

The twenty-seventh Congrès de l'Association française de chirurgie was opened, October 7, under the presidency of Dr. G. Maunoury, surgeon on the staff of the Hôtel Dieu de Chartres. The opening session was presided over by Dr. Louis Mourier, under-secretary of state of the Service de Santé militaire. In his opening address Dr. Mourier thanked the medical corps for its devoted services during the war.

LONDON LETTER

LONDON, Oct. 31, 1918.

A New Medical Department for Dealing with Disabled Soldiers

The number of disabled soldiers discharged from the army under treatment directed by the ministry of pensions now amounts to 30,000. It has been decided to establish a new medical department for the purpose, and Sir John Collie has been appointed medical director. The first step taken by the newly formed department was to complete arrangements with all existing general hospitals that could spare accommodation to provide treatment of the character required. It soon became obvious that this accommodation was insufficient. There are also certain disorders from which the discharged men suffer for which little, if any, accommodation existed. To deal with them it has been necessary to provide and arrange for special institutions. Six homes of recovery for men suffering from neurasthenia and shell shock have already been opened, and three more are being rapidly prepared. These institutions are under the care of specialists on nervous disorders, and every opportunity is given for effecting complete cure. It has been decided that special arrangements must be made for the large number of paralyzed men. For obvious reasons it is undesirable that cases of this sort should be dealt with in general hospitals. Steps, therefore, are being taken to establish in each country, in connection with hospitals, separate institutions where these men will be readily accessible to their friends. It would be an addition to their already grievous plight if they were segregated in one large institution and cut off from personal contact with their friends and relations. These cases require exceptional treatment, and it is hoped, in addition to what the medical department can do in the way of service and allowances, to enlist the sympathies of special committees of influential people who will take a personal interest in providing amusements, entertainments, and the various little luxuries and attention that mean so much to men in this condition. The capitation grants sanctioned by the treasury will cover only the actual cost of the treatment and nursing, which in these cases is very expensive. Special arrangements have been made at most of the spas for the treatment of rheumatic patients, and hostels have been provided and are in the course of provision to accommodate the men. The large number of orthopedic cases (which embrace practically all injuries to limbs) has also necessitated special arrangements. Orthopedic surgery has greatly developed during the war. A scheme is on foot for setting up annexes in connection with the special military surgical hospitals. The treatment of the discharged man in these annexes will be kept entirely distinct from that of the serving soldier, but the supervision of the treatment and the decisions as to operations will be undertaken by the specially skilled staff at the disposal of the War Office. In addition, outpatient clinics for orthopedic treatment of discharged men will be established as occasion requires. It is expected that in each large town of 50,000 inhabitants or more a clinic will be established which will be supervised by surgeons from the special military surgical hospitals. Special aural boards have been established in London and the provinces to regulate the award of pensions and determine the treatment and training to be given men discharged on account of deafness and the various forms of ear disease. Special aural clinics have also been established for giving treatment of this character when it cannot be obtained at hospitals, and classes have been formed to give instruction in lip reading to those who are totally deaf.

Physicians' Action Against the British Medical Association

An important libel action has been decided against the British Medical Association. It was brought by four physicians who claimed damages for conspiracy to injure them in their profession and to libel and slander them. They had been medical officers of the Coventry Provident Dispensary, an approved institution under the national health insurance act of 1911. The members paid a small subscription and in return received from the dispensary medical attendance during illness. The dispensary was begun in 1831, and in 1888 it had 20,000 members. In 1906 the British Medical Association became very hostile to the dispensary on the grounds that canvassing of the public for patients by a collector paid by commission was improper, that the management was too exclusively in lay hands, and that there was no proper wage limit for the subscribers. As a result, five of the medical staff resigned, a new medical club was started under the auspices of the British Medical Association, and an attempt was made to prevent the dispensary obtaining medical service. However, four physicians continued in the employment of the dispensary. The Coventry division of the British Medical Association, supported by the central organization, then endeavored to make things unpleasant for them. Members of the Association were forbidden to enter into professional relations with the medical officers of the dispensary. Thus if the opinion of a consultant was required in a case, the patient had first to discharge the dispensary physician and place himself under an outside one before he could obtain this.

Mr. Justice McCardie delivered a long judgment occupying four hours. He said that it was clear that the aim of the defendants was to inflict professional ruin on any physician who broke the rules of the local body or any rule that might be made by the head body itself. That grave power was used not only against the members of the defendant association but also against those who had never belonged to it. The defendants claimed to enforce by boycott their own standard of medical honor and interest throughout the country. That point was momentous; it touched the vital interests of every physician. He might be exposed to degradation

and dishonor at the will of a body that was void of the slightest statutory authority. Such authority was conferred on the General Medical Council, a body of physicians appointed for disciplinary purposes. But the British Medical Association had taken to itself a jurisdiction more far-reaching, and perhaps, more potent than that of the General Medical Council. It entrusted to a large extent the standard of "the honor and interest" of the medical profession to a number of scattered bodies throughout the country, which varied in numbers, inclination, views and self-interest. A branch or division might make a rule to suit its own local pecuniary interest. If such a rule should be broken by a physician, were he a member of the Association or not, he became subject to a declaration that he had acted against the honor and interests of the medical profession. On that declaration there followed a local condemnation, and on that local condemnation there might result a merciless boycott and ruin. What had the plaintiffs done? They had merely accepted posts as the medical officers of a highly respectable and ably managed dispensary on terms that gave them ample remuneration of some $3,000 or $3,500 a year, a full opportunity of private practice, and adequate leisure. Their only fault lay in the fact that this acceptance prevented the local physicians from achieving their wish of either capturing or destroying the Coventry dispensary. The alleged sin was a financial rather than a moral one. The pecuniary interests of the Coventry physicians lay at the root of the matter. The question of ethics—medical or otherwise—had nothing to do with the case; and the assertion that the plaintiffs had been guilty of conduct against the "honor" of the profession could not, in his view, be supported. The honor of the medical profession was amply protected by the wide powers entrusted to the General Medical Council by Parliament. He could not view with favor the assumption by the British Medical Association of a coordinate jurisdiction and the enforcing of the varying views of medical honor with weapons of ostracism, intimidation and threat. The plaintiffs were boycotted and punished and pecuniarily damaged without just cause in law. The plaintiffs did not sin against the "honor" of the medical profession within any fair meaning of that word.

The judge next considered the question of motive and malice in relation to a cause of action based on the pecuniary injury inflicted by the employment of unlawful means. Actual malice was not necessary in such an action for molestation as the present, and it was only necessary to prove the use of illegal means, such as violence or threats. The motives, feelings and objects of the defendants were mixed. Their conduct was doubtless instigated to a large extent by the desire to protect the local pecuniary interests of the Coventry physicians, and the general interests of the profession. But, on the other hand, the defendants were angrily hostile to the plaintiffs. They sought every opportunity of inflicting humiliation, and they evidently wished to render the lives of the plaintiffs unbearable. They desired to do far more than merely to protect their interests. They desired to punish the plaintiffs as a separate end in itself, and they meant to make that punishment bitter to the last degree. The judge gave damages against the association in varying sums for the four plaintiffs aggregating $14,000.

Marriages

Capt. Lawrence Lewellyn Craven, M. C., U. S. Army, East Penn, Iowa, on duty at Kelly Field, San Antonio, Texas, to Miss Lena L. Newton of Kalamazoo, Mich., at San Antonio, November 14.

Major Elmer Ellsworth Heg, M. C., U. S. Army, Seattle, on duty at Camp Jackson, S. C., to Miss Evelyn R. Sampson of White River Valley, Wash., at Seattle, October 14.

Rayford Kennedy Adams, Raleigh, N. C., to Miss Mary Belle King, at Charlotte, N. C., November 2.

Harry Irving Partridge to Mrs. Josephine Houkins Jennings, both of Syracuse, N. Y., November 5.

Zachariah Brainerd, Hunnewell, Mo., to Miss Mona Alexander of Leesburg, Mo., September 13.

George Elliott Ebright to Miss Florence Braverman, both of San Francisco, November 7.

William E. Parke, to Miss Grace Woods, both of Philadelphia, November 12.

Deaths

Charles W. Brown, Washington, D. C.; Long Island College Hospital, Brooklyn, 1871; aged 72; a member of the Medical Society of the District of Columbia; lecturer on surgery to the Lucy Webb Hayes Training School, and surgeon to the Sibley Memorial Hospital; formerly physician to the Elmira (N. Y.) State Reformatory; health officer of Elmira for two terms; secretary and president of the Tioga County (Pa.) Medical Society; secretary of the Elmira Academy of Medicine; secretary and president of the Third District Branch of the New York State Medical Association; died at his home, November 10, from carcinoma of the stomach and aneurysm of the descending aorta.

Lieut. Ira Condict Whitehead, Jr. ✠ M. C., U. S. Army, Hoosick, N. Y.; Albany (N. Y.) Medical College, 1912; aged 32; who was on duty with the British Expeditionary Forces in Flanders in 1917, and was invalided from there to the Prince of Wales Hospital, London, thence to Osborne House on the Isle of Wight, and then to Netley Hospital, where he was found to be suffering from nerve shock and cholecystitis, and was returned to the United States and placed in the U. S. Army Hospital No. 1, Williamsridge, and honorably discharged on account of physical disability, Aug. 16, 1918; died at his home, October 27, from pneumonia.

Lieut. William Frederic Craig ✠ M. C., U. S. Army, Philadelphia; Medico-Chirurgical College of Philadelphia, 1897; aged 44; a specialist in neurology; for fifteen years professor of biology, anatomy and French in the Central High School; who entered the military service in May, 1917, and was on duty at Camp Oglethorpe, Ga., Camp Weir, and finally assigned to duty with the Three Hundred and Fifteenth Infantry at Camp Meade, Md., and went to France with the Seventy-Ninth Division; was killed, September 26, while caring for wounded soldiers northwest of Verdun, France.

Capt. Henry Guild Burton ✠ M. C., U. S. Army (retired), San Francisco; New York University, New York City, 1869; aged 71; formerly clinical assistant to the chair of ophthalmology in the San Francisco Polyclinic and the Medical Department of the University of California, and assistant surgeon to the Pacific Branch of the National Home for Disabled Volunteer Soldiers, Los Angeles; who entered the Army as assistant surgeon in 1876, and was retired Feb. 5, 1902, on account of disability in line of duty; died, recently, at his home.

Capt. James Frederick Munson ✠ M. C., U. S. Army, Sonyea, N. Y.; University of Michigan, Ann Arbor, 1904; aged 37; for twelve years pathologist at the Craig Colony for Epileptics, Sonyea, and for several years secretary of the National Society for the Study of Epilepsy; formerly assistant in hygiene in his alma mater; died at his station, Plattsburg, N. Y., October 25, from influenza.

George E. Spear, Lincoln, Neb.; University of Nebraska, Omaha, 1903; aged 45; formerly a member of the Nebraska State Medical Association; a member of the Association of Military Surgeons of the United States; a member of the staff of the Ingleside State Hospital from 1905 to 1907; who was shot by a nurse in Lincoln, November 11, died from his wounds, November 12.

Charles Ransom Johnson, Kansas City, Mo.; University Medical College, Kansas City, Mo., 1905; aged 55; assistant to the chair of practice of medicine and assistant demonstrator of anatomy in his alma mater; formerly superintendent of the Kansas City General Hospital and the Leeds Municipal Hospital; died in Grace Hospital, Kansas City, November 10.

Henry E. Jones, Portland, Ore.; Bellevue Hospital Medical College, 1869; aged 80; acting assistant surgeon, U. S. Army; emeritus professor of clinical gynecology in the University of Oregon, Portland; a veteran of the Civil War, in which he served as surgeon in the Confederate Service; died at his home, November 9, from heart disease.

George A. Stewart, Brookport, Ill.; Louisville (Ky.) Medical College, 1889; aged 55; a member of the Illinois State Medical Society; local surgeon to the St. Louis and East St. Louis Suburban Railroad Company; died in Centropolis, Ill., October 31, as the result of rupture of the gallbladder.

Frank Leland Mitchell ✠ Liberty, Ind.; Central College of Physicians and Surgeons, Indianapolis, 1903; aged 45; while driving in his automobile over the Chesapeake and Ohio tracks, at a grade crossing near Kitchell, Ohio, October 28, was struck by an engine and instantly killed.

Stanley W. Edwins, Ellwood, Ind.; Cincinnati College of Medicine and Surgery, 1870; aged 82; for several years local surgeon to the Panhandle System; from 1878 to 1882 a member of the state legislature; died at his home, November 16, from the effects of a gunshot wound of the head, self-inflicted, it is believed, with suicidal intent.

Louis N. Wilson, Baltimore; College of Physicians and Surgeons, Baltimore, 1876; aged 66; for thirty-three years a practitioner of Mardela Springs, Md.; formerly a member of the Medical and Chirurgical Faculty of Maryland; died at his home, November 14, from heart disease.

Putnam Dickinson, Des Arc, Ark.; Missouri Medical College, St. Louis, 1880; aged 69; formerly president of the Prairie County Board of Health and vice president of the Prairie County Medical Society; died at his home, November 9, from pneumonia following influenza.

Lieut.-Com. Frank Pennybacker White Hough ✠ P. A. Surg., U. S. Navy; on duty on *U. S. S. Huron;* University of Virginia, Charlottesville, 1907; aged 34; who entered the Navy, April 11, 1908; died on board the *U. S. S. Huron,* October 27, from bronchial pneumonia.

Charles Pulford Forward, Dubuque, Iowa; Washington University, St. Louis, 1912; aged 29; a member of the Iowa State Medical Society; a specialist in pediatrics; died in Finley Hospital, Dubuque, November 11, from influenza.

Thomas Rutherford Savage, New York City; College of Physicians and Surgeons in the City of New York, 1874; aged 66; physician to the French and Presbyterian hospitals, and to the outpatient department to St. Luke's Hospital; died at his home, November 12.

John William Batte, Nashville, Tenn.; Jefferson Medical College, 1846; aged 95; for fifty-four years a practitioner of Pulaski, Tenn.; died in St. Thomas' Hospital, Nashville, from the effects of concussion of the brain sustained in a street car accident, October 21.

Frank E. Lewis Brecht ✠ Buffalo; University of Buffalo, N. Y., 1872; aged 73; a member of the Buffalo Academy of Medicine; assistant health physician of Buffalo during the smallpox epidemic of 1872; died at his home, October 29, from influenza.

Lieut. Oscar Miller Klingen ✠ M. C., U. S. Army, Minneapolis; University of Minnesota, Minneapolis, 1916; aged 29; who went to France with Base Hospital No. 26, in June, 1918, died at his post, October 16, from pneumonia following influenza.

Isaac H. Lent, Middletown, N. Y.; Albany, (N. Y.) Medical College, 1873; aged 72; a member of the Medical Society of the state of New York; consulting ophthalmologist to Thrall Hospital, Middletown; died at his home, about October 20.

Lieut. Arthur Morgan Evans ✠ M. C., U. S. Army, Chicago; University of Illinois, Chicago, 1916; aged 28; died in Evacuation Hospital No. 21, Camp Custer, Battle Creek, Mich., October 5, from cerebrospinal meningitis.

Julius H. Ruhl, Galveston, Texas; University of Texas, Galveston, 1899; aged 40; a member of the State Medical Association of Texas; demonstrator of obstetrics in his alma mater; died at his home, November 10.

Chadwick Evans Arnold, San Jacinto, Calif.; Cooper Medical College, San Francisco, 1901; aged 41; formerly in the United States Indian Service; died at his home, November 7, from pneumonia following influenza.

James Walter G. McLaughlin ✠ Georgetown University, Washington, D. C., 1908; aged 35; director of the State Bank of Beaver Falls; died at his home, November 10, from pleuropneumonia following influenza.

Clifford F. Morell, Brainerd, Minn.; University of Minnesota, Minneapolis, 1914; aged 31; a member of the Minnesota State Medical Association; died at his home, November 13, from pneumonia following influenza.

Lieut. Francis Marion Burkhalter ✠ M. C., U. S. Army, Ray City, Ga.; Atlanta (Ga.) School of Medicine, 1909; aged 31; who arrived in France, July 20, died there on October 8, from lobar pneumonia.

David Q. Will, Moore's Store, Va.; Maryland Medical College, Baltimore, 1902; aged 40; a member of the Medical Society of Virginia; died at his home, November 13, from pneumonia following influenza.

Capt. Lawrence Edward Flannagan ✠ M. C., U. S. Army, Charlottesville, Va.; University of Virginia, Charlottesville, 1884; aged 54; died at his home, about November 6, from pneumonia following influenza.

William Hampton Caldwell, Houston Heights, Texas; Baltimore (Md.) College, 1883; aged 60; a member of the staff of St. Luke's Hospital, Houston; died at his home, November 10, from pneumonia.

Pierre Leonard Couillard, Manchaug, Mass.; Montreal School of Medicine and Surgery, 1875; aged 68; a member of the Massachusetts Medical Society; died at his home, October 11, from pneumonia.

Edward A. Hudson, Edison, Neb.; Missouri Medical College, St. Louis, 1890; aged 51; a member of the Nebraska State Medical Association; died in Cambria, Neb., October 7, from cerebral hemorrhage.

Alfred Marius Wang ✠ Minneapolis; Northwestern University Medical School, Chicago, 1886; aged 57; attending physician to St. Mary's Hospital, Minneapolis; died at his home, November 13.

Died in the Service
LIEUT. WILLIAM H. BUFFUM, M. C., U. S. NAVY, 1877-1918
(*See The Journal, last week, p. 1760*)

Samuel Berlin, Brooklyn; Long Island College Hospital, Brooklyn, 1916; aged 26; a member of the staff of Fordham Hospital; died at Fort Slocum, N. Y., October 16, from bronchial pneumonia.

James Frankland Boyle, Edmonton, Alta.; University of Toronto, Ont., 1896; L.R.C.P., L.R.C.S., Edinburgh, L.R.F.P. and S., Glasgow, 1903; aged 46; died, recently, in Edmonton, from influenza.

Horace Charles Newbury, Chicago; University of Pennsylvania, Philadelphia, 1918; aged 24; an intern at the Ravenswood Hospital; died, November 19, from pneumonia following influenza.

Edward Everett Hamblen, Bedford, Mass.; Tufts College, Boston, 1898; aged 53; a member of the Massachusetts Medical Society; town physician of Bedford; died at his home, November 10.

C. A. Edwards, Doerun, Ga.; Atlanta (Ga.) Medical College, 1898; a member of the Medical Association of Georgia; died at his home, about November 8, from pneumonia following influenza.

William L. Creswell, Danbury, Iowa; State University of Iowa, Iowa City, 1903; aged 40; died in St. Vincent's Hospital, Sioux City, Iowa, October 22, from pneumonia following influenza.

Aaron Dudley French, Allendale, Ill.; Barnes Medical College, St. Louis, 1904; aged 42; a member of the Illinois State Medical Society; died at his home, October 17, from pneumonia.

Daniel W. Jones, Princess Anne, Md.; Jefferson Medical College, 1848; aged 95; for several years chief judge of the orphan's court of Somerset County; died at his home, November 12.

Nathan Kendall Mills ✠ Odanah, Wis.; St. Louis University, 1911; aged 36; government physician at Odanah; died at that place, November 9, from pneumonia following influenza.

Dolphus L. Stevens ✠ Foreman, Ark.; College of Physicians and Surgeons, Little Rock, Ark., 1910; aged 35; died at his home, October 24, from pneumonia following influenza.

Frederick William Cuyler Lockwood, Greenwich, Conn.; Eclectic Medical College of the City of New York, 1885; aged 62; also a druggist; died at his home, November 13.

Edward Kennedy Henderson, Haliburton, Ont.; University of Toronto, 1909; aged 30; medical officer of the Haliburton County Battalion; died at his home, about November 10.

James Todd Duncan ✠ Toledo, Ohio; Northwestern University Medical School, Chicago, 1905; aged 41; died at his home, October 24, from pneumonia following influenza.

William F. Holden, Winona, Minn. (license, exemption certificate, Minnesota, 1883); aged 67; a practitioner for forty-six years; also a druggist; died at his home, October 30, from organic heart disease.

John Galbraith Martin, Anton Chico, N. M.; Washington University, St. Louis, 1904; aged 35; a member of the New Mexico Medical Society; died, about November 10.

Sebastian Keller, Spokane, Wash.; University of Wurzburg, Germany, 1854; aged 88; for thirty-six years a practitioner of West Bend, Wis.; died at his home, November 3.

Charles Raymond Atzen, Omaha, Neb.; John A. Creighton Medical College, Omaha, 1915; aged 27; died at his home, November 2, from pneumonia following influenza.

Alva W. Wilder, Fort Smith, Ark.; Atlanta (Ga.) Medical College, 1884; aged 59; at one time a member of the Arkansas Medical Society; died at his home, November 14.

Walter Booker England ✠ Huntsville, Ala.; University of Tennessee, Nashville, 1904; aged 35; died at his home, October 12, from pneumonia following influenza.

Lucien Clyde Davis, Lakewood, Wis.; Ensworth Medical College, St. Joseph, Mo., 1903; aged 40; died at his home, about November 2, from lobar pneumonia.

Zachariah Brainerd, Hunnewell, Mo.; University of Missouri, Columbia, 1885; aged 57; died at his home, November 2, from pneumonia following influenza.

Charles Anthony Ordway ✠ Everett, Mass.; Dartmouth Medical School, Hanover, N. H., 1896; aged 44; died at his home, September 24, from influenza.

Henry James Brugge, Grass Range, Mont.; Rush Medical College, 1897; aged 42; a member of the Medical Association of Montana; died, about October 20.

Lieut. Arthur Hastings Wheeler ✠ **M. C., U. S. Army,** Albany, N. Y.; Albany (N. Y.) Medical College, 1912; aged 30; died in California, October 26.

Aurelius Augustine Lyon, Nashville, Tenn.; Washington University, St. Louis, 1861; aged 80; Confederate veteran; died at his home, November 6.

James Thomas Wadkins, Union City, Ga.; Chicago College of Medicine and Surgery, 1913; aged 36; died at his home, October 28, from influenza.

Charles A. Boyce, McLean, N. Y.; University of Syracuse, N. Y., 1879; aged 63; died in his home, November 12, from organic heart disease.

William H. Johnson, Barry, Ill.; Missouri Medical College, St. Louis, 1879; aged 63; died in Barry, November 7, from cerebral hemorrhage.

Theodore Lamkin ✠ Bellamy, Ala.; Birmingham, Ala., Medical College, 1910; aged 39; died in Selma, Ala., October 28, from pneumonia.

Charles Edgar Walker ✠ Charlotte, N. C.; University of Maryland, Baltimore, 1891; aged 51; died suddenly at his home, November 8.

Isaac W. Starr, Brownsville, Ore.; Willamette University, Salem, Ore., 1877; aged 64; died at his home, November 2, from heart disease.

Stanley Miller Martsolf ✠ Westover, Pa.; University of Pittsburgh, 1902; aged 41; died in the Clearfield, Pa., Hospital, October 28.

Clifford Alfred Chance ✠ Madrid, Iowa; Drake University, Des Moines, Iowa, 1911; aged 38; died at his home, recently, from pneumonia.

Patrick Joseph McNulty, Glenlyon, Pa.; University of Louisville, Ky., 1907; aged 42; died at his home, October 28, from influenza.

William Bray Warner ✠ Red Bank, N. J.; New York University, New York City, 1882; aged 58; died at his home, September 1.

William Bowman, Marion, Ind. (license, Indiana, 1903); aged 70; died in a sanatorium in Indiana Harbor, Ind., November 6.

Howard H. Hopkins, New Market, Md.; University of Maryland, Baltimore, 1869; aged 70; died at his home, October 16.

Edgar L. Bay ✠ Eddyville, Iowa; Marion-Sims College of Medicine, 1899; aged 45; died at his home, October 31, from influenza.

Robert Reginald Krueger ✠ Vestaburg, Pa.; University of Pittsburgh, 1916; aged 29; died at his home, November 10.

James L. Brown ✠ Peoria, Ill.; Medical College of Ohio, 1868; aged 77; died at his home, November 8.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

BEER AND CANCER CURES

Did the Brewing Interests Advertise Autolysin?

Our readers may remember that an article appeared in this department of THE JOURNAL for July 6, 1918, under the title "Henry Smith Williams and 'Proteal Therapy.'" "Proteal Therapy" is a treatment exploited by Henry Smith Williams, M.D., of New York, for use in tuberculosis, cancer, rheumatism, etc. It is apparently a modification of the "Autolysin" cancer "cure" which Williams had previously puffed in *Hearst's Magazine.*

THE JOURNAL'S article pointed out that Henry Smith Williams, although entitled to write "M.D." after his name, is essentially a journalist. He has written voluminously for some years in lay publications on various subjects, both under his own name and under his *nom de plume,* "Stoddard Goodhue, M.D." In addition, Williams runs a publishing concern called the Goodhue Company, which issues a number of books, many of them being reprints of Williams' own articles.

Closely associated with Henry Smith Williams is his brother, Edward Huntington Williams, who also is a prolific writer. THE JOURNAL'S previous article called attention to the fact that there had been sent broadcast to physicians a neat little cloth-bound book, entitled, "Alcohol, Hygiene and Legislation." This book, which evidently cost somebody a good deal of money to distribute gratis, was published by the Goodhue Company, and was written by Edward Huntington Williams. Enclosed with the book was an advertising leaflet on the "Autolysin" cancer cure and also a letter from the Goodhue Company, asking physicians to accept it "with our compliments and the compliments of the author." The letter was chiefly devoted to calling attention to Henry Smith Williams' "new book, the Autolysin Treatment of Cancer." The last thirteen pages of the book "Alcohol, Hygiene and Legislation" contained advertisements of the Goodhue Company's publications, particular emphasis being placed on the "Autolysin Treatment of Cancer," by Henry Smith Williams.

So much by way of retrospect. Now comes information that may throw an interesting side-light on the matter just presented. There is at present being conducted by a committee of the United States Senate, an investigation relative to the purchase of a Washington (D. C.) newspaper with money alleged to have been furnished by those interested in the brewing industry.

At the opening hearing before the Senate Committee, Tuesday, November 19, the secretary of the United States Brewers' Association, after admitting that brewers' propaganda had been published in the *International Monthly,* edited by Viereck (of the *Fatherland*), also declared that the Publication Committee of the brewers' association employed writers to "write up certain subjects" relating to the brewers' trade. One of the writers mentioned in this connection was, according to the newspaper reports, "Dr. Edward H. Williams, author of articles published in medical and other journals."

With this fact before us, it seemed worth while to go through the book that had been distributed so lavishly to physicians with the compliments of the Goodhue Company and Dr. Edward Huntington Williams, in the exploitation of "Autolysin," and Henry Smith Williams' book on the subject.

The first chapter of "Alcohol, Hygiene and Legislation" consists of a reprint of an article from the *New York Medical Journal* of May 8, 1915. The article is a skilful presentation of the case for the defenders of the lighter alcoholic beverages, especially beer. This chapter and all succeeding chapters of the book attempt to discredit prohibitory legislation, and argue that prohibition drives the public to the use of the more ardent alcoholic beverages, while preventing

the use of the milder beverages, such as beer, which one is led to infer is not particularly harmful. Throughout the book, also, the state of Kansas is held up as an example of the harm done by prohibition, and the theme is developed that insanity and the use of cocain and other habit-forming drugs follows in the wake of prohibition. The following extracts are from Chapter I:

> The evil effects of *beer* and wine, for example, are greatly less than those produced by spirituous liquors. . . . [Italics ours.—ED.]
>
> If our theory of immunity is correct we should expect to find that the older beverages, such as *beer* and wine, which have been used for thousands of years, are less productive of alcoholic insanity, for example, than the spirituous liquors which are recent innovations. In point of fact we find this to be the case: the spirituous liquors are almost wholly responsible for all forms of alcoholic insanity. [Italics ours.—ED.]

Chapter II is a reprint of an article that appeared in *Everybody's Magazine*, August, 1914, and deals with "Legislation from a Medical Viewpoint." It is to the effect that drug addictions and insanity, together with special forms of mental diseases directly attributable to alcoholism, seem to flourish best in prohibition territory.

Chapter III deals with "The Peace and War Footing of Alcohol," and is a reprint from the *Medical Record*, Aug. 7, 1915. It, too, sings the praises of the "lighter beverages," while deprecating the use of "ardent spirits." For instance:

> An overwhelmingly large proportion of persons who develop alcoholic psychoses in America are drinkers of whisky, or some corresponding ardent spirit, whereas this condition is seldom seen in *beer* and wine drinkers. [Italics ours.—ED.]
>
> Thus we find the highest percentage of alcohol psychoses among the whisky-drinkers who come from western Europe, while the wine and *beer* drinking races of central and southern Europe show a distinctly lower percentage, in some instances only about one-fourth as many per thousand. [Italics ours.—ED.]

Chapter IV deals with "Some Aspects of Liquor Legislation." Like Chapter II it is an indictment of prohibition, and the United States Census Bureau's reports are called on to sustain this thesis. Quotations, too, are made from the writings of Henry Smith Williams further to prove the point. "Dry" Kansas and "wet" Nebraska are frequently compared, to the detriment of the former. One who accepts the statements in this chapter will get the impression that Kansas has more lawlessness, illiteracy, pauperism, and insanity than Nebraska.

Chapter V deals with "The Problem of Legislation." It is based on the premise that "prohibition does not prevent the consumption of liquor," but on the contrary, "prohibitive legislation induces the consumption of the most harmful form of liquors." Stated in another way, it is equivalent to charging that prohibition is hard on the brewers, but beneficial to the distillers. In fact, E. H. Williams, in another book ("The Question of Alcohol"—Goodhue Co.) which also champions the case for the milder alcoholics, quotes Henry Smith Williams as saying, relative to prohibitory legislation: "In general, it would appear that, if our legislators of recent years had been in league with the distiller, they could not have served his purpose better."

Whether or not Edward H. Williams' or Henry Smith Williams' conception of the alcohol problem is good, bad or indifferent, need not at this time concern us. The medical profession, however, has a right to ask two questions: First, Is the Dr. Edward Huntington Williams who wrote "Alcohol, Hygiene and Legislation" the "Dr. Edward H. Williams" who was employed by the brewers to write propaganda favorable to the brewing interests? Second, Was the cloth-bound book, "Alcohol, Hygiene and Legislation," which was distributed by the Williams brothers, paid for, wholly or in part, by the United States Brewers' Association?

For those who wish to read Dr. Edward Huntington Williams' opinions on the alcohol question, the following bibliography may be of service:

"Liquor Legislation and Insanity": *Medical Record*, 1913, lxxxiv, 791.
"The Liquor Question in Medicine": *Medical Record*, 1914, lxxxv, 612.
"Inebriety as a Medical Problem": *Post-Graduate*, 1914, xxix, 603.
"The Problem of Inebriety": *N. Y. Medical Journal*, 1915, ci, 940.
"Aspects of Inebriety in Alcohol": *British Journal of Inebriety*, 1915-1916, xiii, 9.
"The Peace and War Footing of Alcohol": *Medical Record*, 1915, lxxxviii, 226.
"Alcohol and Therapeutics": *Medical Record*, 1917, xcii, 666.

Correspondence

A PRELIMINARY REPORT OF A STUDY OF THE COAGULABILITY OF INFLUENZAL BLOOD

To the Editor:—During the recent influenza epidemic, one of the most striking symptoms was an almost constant occurrence of hemorrhage. Nosebleed was present nearly always in children, and often in adults. Some of the women had menorrhagia and metrorrhagia, and abortion was frequent. We observed one case with hemorrhage from the bladder and two with hemorrhage from the bowels. The cerebrospinal fluid contained blood in two cases in which lumbar puncture was performed for a suspected meningitis. Bleeding from the gums was common, and several young patients developed hemorrhagic purpura. A majority of the so-called pneumonia patients coughed up bright red blood, some of them dying suddenly from asphyxiation due to active hemorrhage. Sudden death came to one convalescent patient from what was, clinically at least, a hemorrhage in the brain.

The regularity with which these various hemorrhages appeared suggested the possibility of there being a change in the blood itself, and accordingly we tested the coagulation time of blood taken from a large number of influenza and pneumonia patients. In every case tested, without a single exception, the coagulability of the blood was lessened, the increase in time required for coagulation varying from two and one-half to eight minutes more than the normal. Blood was tested as early as the second day of influenza, and as late as the twentieth day of convalescence from pneumonia, with the same results. A sufficient number of controls were tested to establish the normal coagulation time for the tests used. Several local physicians also tested blood from their patients, and, while our records are at this time necessarily incomplete, we have yet to receive a report of a case in which the time of coagulation was not prolonged.

With a view toward lessening the tendency to hemorrhage, we started the early use of large doses of calcium lactate, which apparently gave good results. There also seemed to be less bleeding in the pneumonia patients who took calcium iodid to control their cough. We arrived at our conclusions too late in the epidemic to try horse serum or similar coagulating agents, but we believe that in a certain type of pneumonia, or what would be better called hemorrhagic bronchitis, their use would have been justified.

We have no theory to account for the increased coagulation time of influenzal blood. Possibly the presence of *Streptococcus hemolyticus* may be responsible; but as the lessened coagulability appears early while the red cell count remains nearly normal, it would seem that the first change is in the serum rather than in the corpuscles.

We submit this incomplete report in the hope that others may be sufficiently interested in this apparently overlooked feature of influenza to check our findings.

A. W. ERSKINE, M.D., and B. L. KNIGHT, M.D.,
Cedar Rapids, Iowa.

ROENTGEN FINDINGS IN THE PNEUMONIAS FOLLOWING INFLUENZA

To the Editor:—The roentgen examination of the chests of influenza patients during the recent epidemic revealed some very interesting conditions. The cases were not selected to any great extent. The diagnosis of pneumonia, as a rule, was made clinically, and the roentgen ray was used only as corroborative evidence and to determine the extent of involvement. The striking feature was the apparent difference in opinion as to the type, whether lobar pneumonia or bronchopneumonia.

When seen early, the patients presented a rather marked peribronchial infiltration of the larger trunks, with a local or general mediastinitis. The lung structure appeared normal and the movements of the diaphragm were unimpaired. This pathologic condition either became stationary with a

corresponding improvement in the clinical symptoms or there was a rapid progression out into the lung structure with the development, as a rule, of a bronchopneumonia.

In a few instances, the pneumonia was lobar, being confined to one or more lobes. In some cases the infection was so severe that a general pulmonary edema developed with almost complete obliteration of the normal chest shadows. Associated with this severe pulmonary edema was an effusion into the pericardial sac. In examining these cases roentgenographically an attempt was made to follow the regular routine, which consisted of fluoroscopy first, and then the making of plates. Some patients were so very ill that only a minimum amount of observation could be attempted. On fluoroscopy in the mild cases one was struck with the density of the hilum shadows and the marked infiltration of the larger bronchi with an increase in the mediastinal density. In these cases the movements of the diaphragm were unimpaired. In the definite pneumonias the findings would be as above with a bronchopneumonia involving both lungs, as a rule, although a number of cases of unilateral bronchopneumonia were observed.

In these cases the movements of the diaphragm were unimpaired unless the infection was very extensive. These cases at times were so severe that the entire chest became involved, with here and there small islands of apparently normal lung tissues. It was remarkable to see these patients and wonder how they could possibly breathe. A great number of cases of lesser severity were noted. Those that were definitely lobar pneumonia showed involvement of one or more lobes, usually beginning in the lower right. They appeared to be less toxic and were easier to handle. The respiratory movements were always rapid, and the movements of the diaphragm on one or both sides were impaired, and frequently fluid was found in the pleural cavity.

This type of pneumonia was the exception. In these conditions the heart was of interest. In the severe cases of pulmonary edema the heart shadow was obscured, owing to the edema and the fluid in the pericardial sac. A number of hearts in the bronchopneumonia types appeared distinctly bottle shaped. On repeated observations this was found to be due, not to fluid in the pericardial sac, but to a degeneration of the heart muscle with dilatation. In the lobar pneumonias the heart was found, as a rule, enlarged, and was a striking feature along with the impairment of the movements of the diaphragm.

Multiple abscess formation in the lobular type and empyema in the lobar type were also observed, although the latter was not nearly so frequent as in the pneumonias of last fall. Another feature worthy of note was the apparent similarity of these bronchopneumonias to the findings in an acute pulmonary tuberculosis. It would be impossible from roentgen examination alone to differentiate these cases, even after apparent recovery from the pneumonia.

It is with a great deal of hesitancy that we should diagnose cases of tuberculosis in individuals who have had influenza or influenzal pneumonia, even months after apparent recovery. In a limited number of cases bronchiectasis was noted, nearly always unilateral and mostly confined to the lower right chest.

HARRY F. FRIEDMAN, M.D., Chelsea, Mass.
Lieutenant, Junior Grade, U. S. N. R. F.; Roentgenologist, U. S. Naval Hospital.

"STUDIES OF ROENTGENOGRAMS OF THE ACCESSORY NASAL SINUSES"

To the Editor:—In THE JOURNAL, Nov. 9, 1918, p. 1555, Dr. Max Unger of New York, in a preliminary note, describes an alleged new method for the study of the nasal accessory sinuses with the roentgen rays.

As a matter of fact, this method was described very accurately by Dr. George E. Pfahler of Philadelphia, in an article published in the *Laryngoscope*, July, 1916. Every detail mentioned by Dr. Unger appears in Dr. Pfahler's original paper, with considerable enlargement. The only variation in the method consists in the exact size of the film that is used. Dr. Pfahler even described the possibility of cocainization of the pharynx in some hypersensitive patients. He also mentioned the advantages of the method in studying the relations of the floor of the antrum to the neighboring teeth.

Since the publication of this method by Dr. Pfahler, it has been used very generally by roentgenologists throughout the country. I myself have employed it several times.

The method is mentioned on page 208 of Knox's "Radiography," second edition.

Dr. Unger states that his report is a preliminary one and deals only with the use of this method on the cadaver. Yet this is a method that has been in general use on living patients for some time.

ISAAC GERBER, M.D., Providence, R. I.

[A proof of the preceding was sent to Dr. Unger, who replies:]

To the Editor:—I wish to acknowledge with chagrin that Dr. Gerber is correct. My claim to originality was made in good faith since a roentgenologist with whom I discussed the method knew nothing of it and the literature consulted did not contain it. I missed the line in Knox's "Radiography" that mentions this method. May I congratulate Dr. Pfahler on devising such an excellent method.

MAX UNGER, M.D., New York.

SPENCER'S CHLORAMINE PASTILLES

To the Editor:—I notice on the market in local drug stores an article made by "John Wyeth & Son, Sole Proprietors, Philadelphia," labeled "Spencer's Chloramine Pastilles" and recommended for "influenza" and other (similar) conditions. It is further stated that "as the name indicates," these pastilles are made up of *ammonium chlorid* and other substances (which are named), and contain opium.

In view of the fact that "chloramin" is the accepted name of p-toluene sulphochloramid, and that this substance has been recommended for use as a throat spray in connection with the present epidemic of influenza, it seems as though the "chloramine pastilles" were likely to deceive the public, and result in greater, rather than less danger to the people who do not know the nature of these substances, or their relative value.

Should not this be called to the attention of the medical profession, and if possible, of the general public?

S. C. BROOKS, Boston.

[COMMENT.—The term "chloramin" is applied to a class of chemical compounds that contain group :NCl. The chloramin derivative sodium paratoluenesulphochloramid has been called chloramin-T, the "chloramin" indicating the characteristic NCl group, and the "T" the derivation from toluene. Sodium parabenzenesulphochloramid has been called chloramin-B, the "B" indicating its origin from benzene. Before chloramin-T and the related products came into use in medicine, John Wyeth and Brother had registered the term "chloramine" as a trademark for a pharmaceutical preparation which in no sense is a chloramin. This misuse of a chemical term is to be regretted and indicates the need for a revision of our trademark law which permitted the registration of this evidently misleading term.—ED.]

Native Customs and Cancer.—In parts of China where the head is shaved by public barbers, the razors used are often dull and full of nicks, and the irritation of this scraping often causes cancer. Chinese men suffer from cancer of the pharynx and esophagus due to their habit of eating very hot rice, which is thrown into the mouth forcibly with chop sticks. Chinese women eat after their lords and masters, when the rice is cold, and they never have this kind of cancer. In India much cancer is caused by the chewing of betel nut. In some parts of the country women do not chew the nut, and are free of cancer of the mouth. In Khurdistan, India, the natives wear baskets filled with hot coals across their abdomens to protect them from the cold, and more than 50 per cent. of all the cancer in that region forms in the abdomen and groin, while in other countries such cancers are very rare.—Major W. J. Mayo, War Department Lectures.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 14. Chairman, Dr. S. W. Welch, Montgomery.

ARIZONA: Phoenix, Jan. 7. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.

COLORADO: Denver, Jan. 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DELAWARE: Wilmington, Dec. 10-12. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

DISTRICT OF COLUMBIA: Washington, Jan. 14-16. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

FLORIDA (E): Jacksonville, Dec. 16-17. Sec., Dr. G. A. Munch, 1806 Franklin St., Tampa.

FLORIDA (R.): Miami, Dec. 2-3. Sec., Dr. W. M. Rowlett, Citizens Bank Bldg., Tampa.

HAWAII: Honolulu, Jan. 6. Sec., Dr. J. R. Judd, Honolulu.

ILLINOIS: Chicago, Dec. 9-11. Mr. F. C. Dodds, Supt. of Registration, Springfield.

IOWA: Des Moines, Dec. 10-12. Sec., Dr. G. H. Sumner, Capitol Bldg., Des Moines.

LOUISIANA: New Orleans, Dec. 2-4. Sec., Dr. E. W. Mahler, 730 Audubon Bldg., New Orleans.

MINNESOTA: Minneapolis, Jan. 7-10. Sec., Dr. Thomas McDavitt, 741 Lowry Bldg., St. Paul.

NEW MEXICO: Sante Fe, Jan. 13. Sec., Dr. W. E. Kaser, East Las Vegas.

NORTH DAKOTA: Jan. 7. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.

OHIO: Columbus, Dec. 3-5. Sec., Dr. H. M. Platter, State House, Columbus.

OKLAHOMA: Oklahoma City, Jan. 7-8. Sec., Dr. J. J. Williams, Weatherford.

OREGON: Portland, Jan. 7. Sec., Dr. H. S. Nichols, Corbett Bldg., Portland.

PENNSYLVANIA: Philadelphia, Jan. 7-9. Sec., Mr. Nathan C. Schaeffer, State Capitol, Harrisburg.

RHODE ISLAND: Providence, Jan. 2-3. Sec., Dr. B. U. Richards, State House, Providence.

SOUTH DAKOTA: Pierre, Jan. 14. Sec., Dr. P. B. Jenkins, Waubay.

UTAH: Salt Lake City, Jan. 6. Corres. Sec., Dr. G. F. Harding, 405 Templeton Bldg., Salt Lake City.

VIRGINIA: Richmond, Dec. 10-13. Sec., Dr. J. W. Preston, 215 S. Jefferson St., Roanoke.

WASHINGTON: Spokane, Jan. 5. Sec., Dr. C. N. Suttner, 415 Old Nat'l Bk. Bldg., Spokane.

WISCONSIN: Madison, Jan. 14. Sec., Dr. J. M. Dodd, 220 E. 2d St., Ashland.

California June Examination

Dr. C. B. Pinkham, secretary of the Board of Medical Examiners of the State of California, reports the written examination held at San Francisco, June 25-27, 1918. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 166 candidates who took the physician's and surgeon's examination, 125, including 25 osteopaths, passed, and 41, including 32 osteopaths, failed. Two candidates were licensed on Army and Navy credentials. Fifty-two candidates were licensed through reciprocity and 3 candidates were granted osteopathic reciprocity licenses. Of the 9 drugless healers examined, 8 passed and 1 failed. Ten candidates were granted licenses to practice chiropody. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
California Eclectic Medical College		(1914)	75.2
College of Medical Evangelists		(1918)	82.5, 83.2, 86, 86.9, 87.1, 87.8, 88.3, 88.5, 89.1, 89.2, 90.5, 91.5, 91.5, 91.7, 91.8, 92.5, 92.8, 93.5, 94.2, 94.8.
College of Physicians and Surgeons, Los Angeles		(1918)	75, 75, 75.3, 75.8, 76.3, 76.4, 79.2, 79.7, 80.5, 81, 81.2, 82.3, 83.1, 83.2, 84, 86.3, 86.9 89.8, 89.9, 90.1, 90.1, 91.5, 94.2.
College of Physicians and Surgeons of San Francisco		(1915)	76.1; (1917) 82, (1918) 79.4, 80.7, 81, 82.7, 85.9, 86.3, 87.8, 88, 91.3, 91.9, 94.
Hahnemann Medical College of the Pacific		(1918)	76.3, 77.5, 80.7, 83, 90.5, 93.3.
Leland Stanford Junior University		(1916)	91.2; (1917)*; (1918) 88.5, 92
Oakland College of Medicine and Surgery		(1918)	85.2, 86, 90.3.
University of California		(1918)	84.1, 85, 87, 87.5, 89.4, 89.7, 89.8, 89.9, 89.9, 90.3, 90.3, 90.5, 92, 92.1, 92.1, 92.9, 92.9, 93.3, 94, 94.3, 95.3.
Atlanta Medical College		(1916)	79.1
Chicago College of Medicine and Surgery		(1917)	87.9, 92.7
Rush Medical College		(1917)	92.2
Johns Hopkins University		(1918)	89
Harvard University		(1882)*; (1916)	92.8; (1918) 95.4
Jefferson Medical College		(1918)	90.5
Licentiate of the Royal College of Physicians, London, and a Member and Licentiate of the Royal College of Surgeons, England		(1914)	89.2
	FAILED		
College of Physicians and Surgeons, Los Angeles		(1918)	67.7, 69.9
College of Physicians and Surgeons, San Francisco		(1918)	63.2, 69, 71.9.
Hahnemann Medical College of the Pacific		(1918)	67.9, 71.1
Medical College of Virginia		(1917)	70.5
Tohoku Imperial University Special Medical Dept.		(1915)	69.9

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
California Eclectic Medical College		(1903)	(1913) Nevada
College of Physicians and Surgeons of San Francisco		(1904)	(1911) Nevada; (1916) Oregon.
Gross Medical College		(1899)	Colorado
George Washington University		(1916)	Nebraska
Bennett Medical College		(1914)	Missouri
College of Physicians and Surgeons, Chicago		(1904)	Iowa
Hahnemann Medical College and Hospital of Chicago		(1896)	Illinois
Northwestern University Woman's Med. School		(1893)	Wisconsin
Rush Medical College		(1868)	Minnesota; (1910) Illinois
Woman's Medical College		(1889)	Illinois
Indiana Medical College (Purdue Univ.)		(1906)	Indiana
State College of Phys. and Surg., Indianapolis		(1907)	Indiana
Drake University		(1912)	Iowa
Keokuk Medical College, Coll. of Phys. & Surg.		(1902) (1908)	Iowa S. Dakota
State University of Iowa College of Medicine		(1910)	Iowa
Kentucky University		(1903)	Iowa
Louisville National Medical College		(1898)	Indiana
Johns Hopkins University		(1912)	Washington
University of Maryland		(1909)	N. Carolina
Harvard University		(1915)	Massachusetts; (1915) New York
Michigan College of Medicine		(1884)	Michigan
Hamline University		(1902)	Minnesota
American Medical College		(1890)	Nebraska
Beaumont Hospital Medical College		(1897)	New Mexico
Ensworth Medical College		(1910)	Nebraska
Kansas City College of Medicine and Surgery		(1917)	Arkansas
Marion-Sims Beaumont Medical College		(1901)	Ohio
St. Louis College of Physicians and Surgeons		(1910)	Missouri
St. Louis University		(1904)	Washington
Washington University		(1905)	(1911) Missouri
Columbia College in the City of New York		(1896)	New York
Toledo Medical College		(1912)	Ohio
Hahnemann Med. Coll. and Hosp. of Philadelphia		(1902)	New York
Jefferson Medical College		(1883)	Pennsylvania; (1905) Minnesota
University of Pittsburgh		(1909)	Penna.
Woman's Medical College of Pennsylvania		(1901)	Virginia
Meharry Medical College		(1916)	Tennessee
University of Nashville		(1901)	Indiana
Marquette University		(1909)	Wisconsin
Wisconsin College of Physicians and Surgeons		(1912)	Oklahoma
University of Toronto		(1888)	Illinois; (1908) Washington
University of Turin		(1914)	New York
Kumanota Special Medical School		(1909)	Arizona

* No grade given.

Iowa September Examination

Dr. G. H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, Sept. 10-12, 1918. The examination covered 8 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 9 candidates examined, 8 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard University		(1918)	77.1
Bennett Medical College		(1914)	88.6
Northwestern University		(1918)	79.2, 86.2
Rush Medical College		(1918)	91.1
University of Illinois		(1918)	88.2
Albany Medical College		(1895)	87.2
Columbia University		(1901)	92.9
	FAILED		
College of Physicians and Surgeons, Keokuk		(1880)	39.9

Dr. Sumner also reports that 6 candidates were licensed through reciprocity at the meeting held Sept. 8, 1918. The following colleges were represented:

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Yale University		(1909)	Missouri
Chicago College of Medicine and Surgery		(1911)	Illinois
Chicago Homeopathic Medical College		(1903)	Illinois
Ensworth Medical College		(1902)	Nebraska
Miami Medical College		(1893)	Missouri
University College of Medicine		(1896)	Virginia

Nebraska June Examination

Dr. J. J. Hompes, secretary of the Nebraska State Board of Medical Examiners, reports the oral, practical and written examination held at Lincoln, June 3-5, 1918. The examination covered 14 subjects. An average of 75 per cent. was required to pass. Of the 45 candidates examined, 44 passed and 1 failed. Twenty-one candidates were licensed through

reciprocity. Four candidates were granted reregistration certificates. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Chicago College of Medicine and Surgery	(1917)	81
John A. Creighton Medical College (1918) 77, 77, 80, 80, 80, 81, 82, 82, 83, 86, 86, 86, 88, 88, 90, 90.		
University of Nebraska (1918) 80, 80, 81, 81, 83, 83, 83, 83, 84, 85, 85, 85, 85, 86, 86, 86, 86, 87, 88, 89, 89, 89, 89, 90, 90, 94.		
Eclectic Medical College	(1918)	81
FAILED		
Loyola University	(1917)	59

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Bennett College of Eclec. Med. and Surg.	(1905)	Illinois
Bennett Medical College	(1915)	Illinois
Chicago College of Med. and Surg. (1912) Illinois;	(1913)	Iowa
Chicago Physio-Medical College	(1891)	S. Dakota
College of Phys. and Surg., Chicago	(1908) Iowa; (1910)	Kansas
University of Illinois	(1914)	Illinois
Keokuk Medical College	(1894)	Missouri
Tulane University	(1898)	Georgia
St. Louis College of Physicians and Surgeons	(1898)	Missouri
Washington University	(1906) Iowa; (1911)	Missouri
John A. Creighton Medical College... (1901) Iowa;	(1917)	U. S. Navy
Columbia University	(1903)	New York
Cornell University	(1917)	U. S. Navy
Cleveland Homeopathic Medical College	(1908)	Ohio
University of Cincinnati	(1915)	Kansas
Medico-Chirurgical College of Philadelphia	(1897)	Penna.
University of Pennsylvania	(1915)	N. B. M. Ex.

Oklahoma July Examination

Dr. J. J. Williams, secretary of the Oklahoma State Board of Medical Examiners, reports the written examination held at Oklahoma City, July 9-10, 1918. The examination covered 10 subjects and included 100 questions. An average of 70 per cent. was required to pass. Six candidates, including 1 osteopath, were examined, all of whom passed. Sixteen candidates, including 7 osteopaths, were licensed through reciprocity. Seven candidates were granted reregistration licenses. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
George Washington University	(1917)	83
College of Physicians and Surgeons, Chicago	(1905)	89
Rush Medical College	(1913)	84
Maryland Medical College	(1910)	84
Meharry Medical College	(1918)	71

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Atlanta Medical College	(1895)	Texas
Bennett Medical College	(1915)	W. Virginia
Kentucky School of Medicine of Louisville	(1898)	Kentucky
University of Louisville	(1908)	Arkansas
National University of Arts and Sciences	(1918)	Missouri
University Medical College of Kansas City	(1897)	Missouri
John A. Creighton Medical College	(1913)	Nebraska
New York University	(1896)	Missouri
Memphis Hospital Medical College	(1894)	Texas

Georgia October Examination

Dr. C. T. Nolan, secretary of the Georgia State Board of Medical Examiners, reports the written examination held at Atlanta, Oct. 8-9, 1918. The examination covered 10 subjects and included 100 questions. An average of 80 per cent. was required to pass. Of the 8 candidates examined, 7 passed and 1 failed. Nine candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Emory University	(1918)	88.6, 90.8
Southern College of Medicine and Surgery	(1913)	82
University of Illinois	(1916)	85.7
Columbia University	(1917)	91.5
Meharry Medical College	(1916) 82.5; (1918)	82.1
FAILED		
Southern College of Medicine and Surgery	(1913)	75.2

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Birmingham Medical College	(1915)	Oklahoma
University of Alabama	(1910)	Alabama
Atlanta Medical College	(1892)	Alabama
Louisville Medical College	(1886)	W. Virginia
Baltimore Medical College	(1896)	Mass.
Eclectic Medical Institute	(1888)	Indiana
Vanderbilt University	(1917)	Tennessee
University of Vermont	(1918)	Vermont
University of Virginia	(1913)	New Jersey

Book Notices

Dispensaries: Their Management and Development. A Book for Administrators, Public Health Workers, and All Interested in Better Medical Service for the People. By Michael M. Davis, Jr., Ph.D., Director of the Boston Dispensary, and Andrew R. Warner, M.D., Superintendent of Lakeside Hospital, Cleveland. Cloth. Price, $2.25. Pp. 438. New York: The Macmillan Company, 1918.

The first dispensary in this country was started in 1786. What a difference between that primitive institution, managed entirely by one charitably inclined doctor dispensing drugs to perhaps sixty or seventy poor persons during the year, and the great modern dispensary with its scores of employees and its large medical staff, representing all departments of the science, and handling hundreds of patients daily. From a single little room, or perhaps only a desk, in the back of an apothecary shop, the dispensary has grown until it has become one of the largest and most important factors in present day social economics. How this growth has taken place and the various factors that have been instrumental in bringing the dispensaries up to their present high state of development have been most interestingly and instructively presented by the authors in this volume. They likewise discuss in a comprehensive manner the proper management of modern dispensaries, from the small dispensary handling only a few cases daily, or the special dispensary with but a single class of cases, to the great general dispensary, with its many clinics, handling 100,000 or more cases annually. Every phase of the subject, including the financing of such institutions, the question of free and pay patients, efficiency tests, the follow-up system, and social service in all its departments, is covered in a very thorough manner. Not only physicians but those laymen who are interested in the great problems of public health will find in this excellent volume much that is of interest and also of great value.

Hygiene of the Eye. By William Campbell Posey, A.B., M.D., Ophthalmic Surgeon to the Wills and Howard Hospitals. Cloth. Price, $4 net. Pp. 344, with 120 illustrations. Philadelphia: J. B. Lippincott Company, 1918.

This volume contains twenty chapters treating of the ocular structures; visual physiology; refraction and glasses; strabismus; the influence of diseased eyes on the body; school life; artificial and natural lighting; school architecture; the most noticeable diseases of the eye; wounds and injuries; the effects of drugs and beverages on the eyes; color blindness; what to do for the blind; conservation of vision, etc. It is well written and produced. The author's name is a sufficient guarantee of its scientific quality. In paper, printing, etc., it is a physical demonstration of how books may be produced and read with as little injury to the eye as possible. The volume is hardly written for specialists, but it will be found an exceedingly useful book for general practitioners who wish to review the subject and become familiar with facts they should know about the eye. It will also be an extremely valuable book for those members of the laity who desire to keep in touch with this important subject. It can be especially recommended to teachers, nurses, and those who direct hygienic conditions of shops, factories, etc.

Gymnastic Treatment for Joint and Muscle Disabilities. By Brevet Col. H. E. Deane, R. A. M. C. In Charge War Hospital, Croydon. With Preface by Temp. Colonel A. Carless, Army Medical Service and Brevet Lieut.-Col. F. W. Mott, F.R.S., R. A. M. C. (T.) Maudsley Hospital, Denmark Hill. Cloth. Price, $2.50 Pp. 146, with illustrations. New York: Oxford University Press, 1918.

In this little book the author sketches his method of gymnastic treatment of joint and muscle disabilities among wounded soldiers, employing apparatus of the simplest sort, and having in view always the quickest possible return of the man to his military duties or, if permanently invalided, to the best possible working and earning condition. While giving due credit to massage, passive motion, either manual or mechanical, he deprecates the prolonged keeping of these patients under such treatment, and insists that much time is wasted; frequently the patient is hospitalized and allowed to deteriorate, when by proper gymnastic methods not only is he educated in the "will to do" for himself, but practical

and remarkable improvement is quickly arrived at by the method he teaches. Every detail of the gymnastic methods employed should be familiar to the one who attempts to apply them. They are simple but effective. The author says that "all the apparatus necessary to cultivate any movement which a soldier is likely to want, and on which work can be adjusted to suit any man fit for exercise at all, are a skipping rope, Indian clubs, dumb-bells, a beam, a slanting ladder, a sparred plank, parallel bars, wall bars, ropes and a nautical wheel," all of which apparatus in use are pictured in the book. The principle constantly emphasized is to have the patient do something for himself, employing the simple apparatus named, together with other calisthenic and gymnastic movements, games, etc., aiming at perfect anatomic results, but being satisfied with compensatory movements, in some cases, that are practically as good.

THE DOCTOR'S PART: WHAT HAPPENS TO THE WOUNDED IN WAR. By James Robb Church, A.M., M.D., Colonel, Medical Corps, U. S. Army. With Foreword by Major-General William C. Gorgas, Surgeon-General, U. S. Army. Boards. Price, $1.50 net. Pp. 284, with illustrations. New York: D. Appleton and Company, 1918.

It is a pleasure at these times to read a book that describes the care of the wounded in France without emotion or sensationalism. Colonel Church is well prepared to write such a book. He has served for twenty years in the Army. In the war with Spain he was with the rough riders, and won the medal for gallantry under fire. He also served on the Mexican border. Early in 1915 he was sent to France as medical military observer. As such he was admitted to the inner medical circles everywhere, and was even able to get into the front trenches. He writes, therefore, as one who speaks with knowledge gained from actual observation and from personal experience. The work amounts to a description of the physician's part in the care of the wounded from the trench and battle field to the first-aid station on through the field, evacuation, base, general and special hospitals. One might suppose that such matter would make tedious reading; but Colonel Church has the happy faculty of making an interesting story out of what might ordinarily be regarded as a dry subject, especially by laymen. Interspersed all along are little incidents and stories of human interest, amusing episodes and withal glimpses of tragedies. His descriptions of conditions met with—of the hospitals, of the physician's life at the front, etc.—are graphic and illuminating. The book is written for the layman in nontechnical language, but certainly this does not detract from its interest for physicians. Colonel Church has a distinct literary touch of which few physicians can boast. Thus he has put life into a dry subject and the result is a book full of information of practical value that is as interesting to read as a novel.

THE AMERICAN HOSPITAL OF THE TWENTIETH CENTURY. A Treatise on the Development of Medical Institutions, Both in Europe and in America, Since the Beginning of the Present Century. By Edward F. Stevens, Architect. Cloth. Price, $5. Pp. 274, with illustrations. New York: Architectural Record Publishing Company, 1918.

The author, an architect, devotes his time exclusively to hospital construction, and has compiled an interesting book showing the rapid developments in hospital planning and construction in this country. He pictures and describes many of the world's greatest hospitals abroad as well as hospitals of every size and specialty in this country, the final chapter being concerned with military hospitals of the present war. The book is profusely illustrated. In the period of construction and reconstruction that will now take place, works of this character should be of great service to those planning new medical institutions.

DISEASES OF THE HEART: THEIR DIAGNOSIS, PROGNOSIS, AND TREATMENT BY MODERN METHODS, WITH A CHAPTER ON THE ELECTRO-CARDIOGRAPH. By Frederick W. Price, M.D., F.R.S., Physician to the Great Northern Central Hospital, London. Cloth. Price, $7.50. Pp. 472, with 246 illustrations. New York: Oxford University Press, 1918.

The object of this book as stated in the preface is to include information with regard to recent advances in the study of cardiac disorders, as well as an account of our knowledge prior to this; and by discussing both from the point of view of the clinician, to enable the medical practitioner to take the fullest possible advantage of modern methods in the diagnosis, prognosis and treatment of diseases of the heart. This purpose has been as well accomplished as could be expected in a volume of 436 pages of text. About one half is taken up with a consideration of the more modern aspects of cardiology, such as the newer conceptions of the irregularities, the polygraph and the electrocardiograph. An intimate familiarity with these subjects is revealed and the topics are well handled. The same may be said of the discussion of the so-called older or better known diseases of the heart, such as the valvular lesions, and diseases of the myocardium, pericardium, etc. The author has the knack of crowding a good many facts into small space so that the book is really a reliable condensed compendium of knowledge of heart disease. Many polygraphic and electrocardiographic tracings elucidate the text.

Social Medicine, Medical Economics and Miscellany

The Stimulating Effect of Nutrients

F. G. Benedict and T. M. Carpenter in Publication 261 of the Carnegie Institution of Washington (1917) give the results of an extensive series of observations with human subjects on the influence of the ingestion of food on metabolism, with special reference to the stimulating effect of nutrients. The conclusions drawn from the various groups of experiments have been stated by the authors in abstracts as follows: (1) The work of mastication, such as would be involved in chewing gum or a rubber stopper continuously, may require an increment in the heat production of approximately 17 per cent. (2) The ingestion of water with a temperature of either 22 C. or 55 C. produces no significant increment of the basal metabolism, if not over 500 gm. of water are taken. With larger amounts of cold water there may be an increase which, in certain instances, has been found to amount to 16 per cent. above the basal value. (3) Coffee, owing probably to its caffein content, acts as a stimulus to the metabolism. Approximately 325 gm. of coffee at a temperature of about 60 C. will produce an increment in the metabolism of 8 to 9 per cent. (4) Beef tea, taken either hot or cold, slightly increases the metabolism. (5) With carbohydrates the basal metabolism may be increased to an average maximum of approximately 25 per cent. by the ingestion of 100 gm. of any one of several sugars, although levulose and sucrose appear to exert a somewhat more powerful influence than the other sugars. This increment occurs inside of two hours and the metabolism has a tendency to return to the base line somewhat rapidly thereafter. (6) The ingestion of a diet containing a preponderance of fat produces a positive increment in the metabolism, although this increment is considerably less than that observed with an equivalent amount of energy in either carbohydrate or protein. (7) The ingestion of protein in almost any quantity invariably produces an increase over the basal heat production, which may be 25 per cent. for several hours, and for short periods may rise to 45 per cent. No definite mathematical relationship between the amount of protein ingested and the increment in the total metabolism could be established in these experiments. No clearly defined difference between the animal and vegetable proteins was found in their influence on the metabolism. (8) The experiments with mixed diets, especially those with excessive amounts of food, showed that it was possible by the ingestion of a large meal to stimulate the metabolism to 40 per cent. above the basal value for a number of hours, and to 20 per cent. for at least eight hours; indeed, there was every reason to believe that the stimulus to the metabolism would have been found to continue considerably longer than the experimental period of eight hours if the observation had been prolonged. The "cost of digestion," or the mathematical relationship between the fuel value of the intake and the increase in heat production due to the ingestion of food, is estimated with carbohydrates to be not far from 6 per cent. on the average; with fat the increase is about 2 per cent. of the fuel value of the intake, with a protein-rich diet approximately 12 per cent., and with mixed diets 6 per cent.

Medicolegal

Quarantine of Communicable Diseases*

A decision by the supreme court of the State of Washington, Aug. 27, 1918, in effect prohibits the release on habeas corpus of a person detained in quarantine by order of the boards of health of Seattle and the state. This person, arrested for disorderly conduct, had been examined by the health commissioner of Seattle in accordance with an ordinance, found to have syphilis, and sent, in accordance with another ordinance, to an isolation hospital for detention and treatment. He had appealed to the state board of health as provided by law, but the finding of the commissioner had been affirmed. He then petitioned the state supreme court for a writ of habeas corpus, and the superior court for King County was instructed by the latter to inquire into the time and cause of his detention. The superior court issued an order to have him examined before it, and thereupon the health commissioner applied to the supreme court for a writ restraining further proceedings on the ground, among others, that an order of the health commissioner could not be reviewed by the court.

The detained person contended that to deny him such a review was to suspend the writ of habeas corpus, and that the actions and findings of boards of health were open to judicial inquiry the same as other boards, institutions and officers. Bailey (Habeas Corpus, Sec. 106) was quoted to the effect that the determinations of such boards "are not final and conclusive; if they were, then the exercise of such summary power could not be upheld."

In its decision the supreme court states that to follow Bailey would be to make the exercise of the police power a judicial function and holds that:

> A writ of habeas corpus is a writ of right, and is never to be denied in any case where the liberty of the subject is made the subject of inquiry. But it has always been held that a return showing a legal cause for the detention of a petitioner is enough to suspend the operation of the writ. . . . Where the police power is set in motion in its proper sphere, the courts have no jurisdiction to stay the arm of the legislative branch of the government, for it is operating in its own particular field, where even the courts are powerless to insist upon a procedure consistent with the forms of the common law. Some courts have held that the discretion and judgment of administrative officers, while very broad, is not absolutely and in all cases beyond judicial control, but the tendency is away from this doctrine, for, granting the right to question means and methods in one case, the questions of fact upon which the administrative order is based might be raised in every case, and the object of the law, which is to deal summarily, to the end that imminent peril to the public may be averted, would be wholly overcome. At any rate, a somewhat extended exploration of the books convinces the writer that a court should not inquire into the reasonableness of an ordinance sounding in the police power in any case where the legislative body has provided the means and methods of carrying it out.

In substantiation of this view, the court cites previous decisions by the Washington Supreme Court and a number of decisions by the United States Supreme Court in regard to the examination or quarantine of immigrants, one of the latter holding that:

> Where a statute gives a discretionary power to an officer, to be exercised by him upon his own opinion of certain facts, he is made the sole and exclusive judge of the existence of those facts, and no other tribunal, unless expressly authorized by law to do so, is at liberty to reexamine or controvert the sufficiency of the evidence on which he acted.

Some additional points were raised by counsel in the case, notably the question of the constitutionality of the quarantine law, which leaves to the boards of health definitions and classification of diseases to be quarantined. In regard to this point the supreme court said:

> This court has not heretofore considered similar laws as a delegation of legislative power or authority. The legislation is that of the legislative body, but it is not always practical to meet every phase of the necessity that has called for the law by the enactment of a general statute. . . . Nor is there any legal reason for denying the power to quarantine summarily, or to restrain for treatment, a citizen or subject because the authority may be abused or the law maladministered in a given case.

One of the points made by the commissioner was that he could not bring his ward into court for examination without subjecting himself to the penalties of the quarantine law; but the supreme court held that "if the court has jurisdiction to inquire into the cause of his detention, resort to examination and expert opinion by those skilled in the diagnosis of disease would not be a breaking of the quarantine."

The contention of the detained person, that the city of Seattle had no authority to pass health ordinances or to create the office of health commissioner, was overruled by the supreme court.

Presumption as to Fit Condition of Person to Use Bath

(Warren v. Werther (N. Y.), 169 N. Y. Supp. 709)

The Supreme Court of New York, Appellate Division, First Department, in reversing a judgment that was rendered in favor of the plaintiff for damages for burns sustained after he became unconscious in the hot room in taking a Turkish bath, but without any negligence on the part of the defendant being proved, holds that when a person apparently in good health and condition presents himself for the use of the accommodations provided in a public bath, the proprietor thereof is justified in believing that the patron is in fit condition to use the bath, knows what he is about, and can safely be permitted to make use of the bathing privileges as ordinarily conducted. The contention that the defendant was liable for failure to supply the plaintiff with medical attendance, after the accident, the court answers by saying that there was no proof in the case that the injuries were in any way aggravated by the tardiness of the medical attendance, nor in fact did the record justify even an inference that the plaintiff was not furnished with medical attendance as soon after he was removed from the hot room as was possible.

Representations of Physicians Making Releases Voidable

(Althoff v. Torrison et al. (Minn.), 167 N. W. R. 119)

The Supreme Court of Minnesota, in affirming an order denying a motion made by defendant Torrison for judgment or a new trial after a verdict had been rendered in favor of the plaintiff for damages for personal injuries from having been struck by an automobile belonging to the defendant and driven by one of his employees, holds that the plaintiff was not barred from maintaining this action by a release executed on what might be taken as mistaken and misleading representations by physicians.

The court says that if agents or physicians in the employ of the defendant procure a release by intentionally deceiving the plaintiff and causing him to believe that his injuries are trivial when they are known to be serious, the plaintiff is not bound by such release.

If the plaintiff executed the release in reliance on representations as to the character and extent of his injuries, made for the purpose of inducing a settlement by agents or physicians employed by the defendant, and such representations were not true, he may avoid the release although the representations were made in good faith and with no intent to deceive; for they had the effect of causing him to be deceived as to a present existing fact—the character and extent of his injury—and amounted to a fraud in law notwithstanding the good faith of those making them. But if the information given to the plaintiff concerning the nature and extent of his injuries was correct and he was not misled as to the consequences which ordinarily follow from such injuries, the fact that an opinion as to the duration of his disability, honestly given, turns out to have been erroneous is not a sufficient ground for avoiding the release.

There was no error in a charge of the trial court which permitted the jury to disregard the release and return a verdict for the plaintiff in this case if they found that she had been induced to execute the release by fraudulent misrepresentations concerning the injury to her leg, or if they found that she had sustained an injury to the sacro-iliac joint which by mutual mistake had not been taken into account when the settlement was made. Conceding that the physicians acted in good faith in stating that they found the leg normal except

* Reported in 3 Washington Decisions 297. From Public Health Reports, Oct. 4, 1918, p. 679.

for certain bruises, yet the evidence would justify the jury in finding that they were mistaken, and that the plaintiff had been misled by them into believing that the injuries to her leg consisted only of these bruises when in fact they included an injury to the nerves quite different in character and effect from what the bruises were represented to be. In other words, the evidence would justify a finding that they had not merely erred in an opinion as to the probable duration of the disability, but, although not intending to do so, had in fact misled the plaintiff as to the character and extent of the injury to the leg—an existing fact susceptible of knowledge.

The money received by the plaintiff having been expended in payment of doctor bills before she learned of the injury which caused her permanent disability, her failure to return it did not operate as a ratification of the settlement. The jury were properly instructed to apply it in reduction of damages if they found that she was entitled to recover them.

Construction of Law Giving Employer Right to Require Necropsy

(Indianapolis Abattoir Co. v. Bryant (Ind.), 119 N. E. R. 24)

The Appellate Court of Indiana, Division No. 2, says that this was the first case in that state, and no foreign case was called to the court's attention, and it found none, involving the construction of a similar statutory provision to that of Section 27 of the Indiana Workmen's Compensation Act, which reads, "The employer, or the industrial board, shall have the right in any case of death to require an autopsy at the expense of the party requiring same." The purpose of the lawmaking body in enacting such statute was, no doubt, for the protection of the employer, against unjust claims, particularly against the payment of compensation when death is due to natural causes instead of by accident. This court does not believe that it was the intention of the legislature that a necropsy could be demanded in every case of death. Such a construction would render the provision unreasonable when the cause of death is clearly apparent without it, when the cause of death is not uncertain and is not in dispute. The right to a necropsy is to be exercised with caution. It is one calculated under the most favorable circumstances to cause some distress of mind to the family of the deceased.

This was a proceeding under the workmen's compensation act to obtain compensation for the death of an employee of the abattoir company named Bryant, who left the claimant surviving him as his sole and only dependent. There was a dispute in this case as to the cause of the employee's death, and under the construction of the statute herein declared the employer had the right, if properly exercised, to have a necropsy performed. But when, as here, the legislature has not provided the procedure for its enforcement, that adopted must be reasonable both as to the time and the occasion for its exercise.

The court thinks that, when a representative of the company called on the claimant in the afternoon of the day following the death of the employee, after the body had been embalmed, and apparently without having with him any physician or any one to perform the work, and requested a necropsy, it could not be said that there was an unequivocal refusal to grant the right conferred by statute, because the claimant said she did not want a necropsy, unless it was absolutely necessary, but to have the man who sent the representative come and she would talk to him. The court also says that it will be observed that the statute in question makes no provision for making a necropsy further than the mere grant of the right, and provides no penalty or condition in case the claimant refuses to consent to it. Neither can it be implied from the statute as a whole that the legislature intended any penalty to follow a refusal. In the court's judgment, the refusal of a claimant to consent to a necropsy would not deprive the industrial board of jurisdiction to proceed to a final disposition of the case. Moreover, the right to demand a necropsy was a right that could be waived, and was waived by the employer's failure to follow up its request in some manner. Wherefore the award of the industrial board is affirmed.

Public Policy with Regard to Marriage of Epileptics

(Kitzman v. Kitzman et al. (Wis.), 166 N. W. R. 789)

The Supreme Court of Wisconsin holds that where, on Sept. 27, 1915, a man and a woman went from Wisconsin to St. Paul, Minn., there obtained a license to marry, and before a justice of the peace in the state of Minnesota had a marriage ceremony performed, receiving from the justice a marriage certificate in the proper form, and returning on the same day to Wisconsin, where they thereafter lived together as husband and wife, a judgment of a circuit court in Wisconsin confirming the marriage, in a suit brought therefor by the woman, must be reversed, with instructions to the circuit court to enter judgment declaring the marriage ceremony null and void, one of the findings of that court being that during the period of ten years preceding the trial the man had been subject to occasional attacks of epilepsy, which epileptic condition was caused by the excessive use of alcohol. The court says that the marriage in Minnesota was solemnized contrary to the express prohibition of the statutes of that state and contrary to its public policy. It was solemnized there after a fraud on the clerk of the district court, in his duty to ascertain and to be satisfied that there was no legal impediment to such marriage, had been perpetrated, either by the concealment by or false statement of the man as to his condition on a material and statutory requirement. It could not properly be held that the public policy of Minnesota, in prohibiting an epileptic from contracting a lawful marriage, was contrary or repugnant to the then public policy of the state of Wisconsin, inasmuch as this state then prohibited the marriage of insane persons and idiots; for, although there is a distinction both in the legal and medical sciences between epilepsy and insanity, yet the court may properly take judicial notice that epilepsy is a serious mental disease, and tends to weaken the power of the afflicted person and to injure his posterity. This court would be loath to declare, if not indeed prevented from declaring, that such a prohibition by Minnesota was contrary to the public policy of Wisconsin, in view of the fact that by Chapter 218, Laws of 1917, the legislature amended Section 2330 of the Wisconsin Statutes by inserting the word "epileptic" between the words "person" and "or," where the provision was made that "no insane person or idiot shall be capable of contracting marriage." The marriage ceremony, therefore, which the plaintiff asked the courts of Wisconsin to confirm in this action, was, where performed, contrary to public policy of the state resorted to by the plaintiff for the sole purpose of performing the ceremony, and this court will give it no higher value in Wisconsin than it had there. The mere fact that the unfortunate man, when examined as a witness in the court below, expressed himself as opposed to the action taken by his guardian in asking that the complaint be dismissed and the alleged marriage be declared void, and indicated his desire of having the marriage ceremony confirmed, and the relationship continued, did not alter the situation nor change the duty of the court in disposing of the case. The state has the right to control and regulate by reasonable laws the marriage relationship of its citizens, and the wishes and desires or even immediate welfare of the individual must yield to that of the public welfare as determined by the public policy of the state.

Insufficient Information Against Physician for Prescribing Liquor

(State v. Bradford (Mo.), 201 S. W. R. 913)

The Kansas City (Mo.) Court of Appeals, reversing a judgment of the circuit court, says that this was a prosecution, by information, of a physician for violation of the statute forbidding the issuance of a prescription for intoxicating liquor for other than medicinal purposes. But the information was not in the language of the statute and did not charge the physician with issuing the prescription for the purpose of enabling the liquor to be used otherwise than for medicinal purposes. In other words, the information did not connect the issuance of the prescription with the purpose of the use of the liquor. It was therefore insufficient.

Society Proceedings

COMING MEETINGS

American Assn. for S. & P. of Inf. Mort., Chicago, Dec. 5-7.
American Physiological Society, Baltimore, Dec. 30-Jan. 1.
American Public Health Association, Chicago, Dec. 9-12.
Medical Association of Porto Rico, Ponce, Dec. 14-15.
Society of American Bacteriologists, Boston, Dec. 30-Jan. 1.
Southern Surgical Association, Baltimore, Dec. 17-19.
Western Surgical Association, Chicago, Dec. 20-21.

INDIANA STATE MEDICAL ASSOCIATION

Annual Meeting, held at Indianapolis, Sept. 26-28, 1918

The President, Dr. J. Rilus Eastman, in the Chair

Anorectal Fistula

Dr. C. F. Fleming, Elkhart: A careful and free opening of ischiorectal abscesses will prevent many fistulas. It is well to cut as few fibers of the external sphincter as possible. The cut should be a single transverse cut and not a dissection destroying the muscle substance. The most important part of the diagnosis is the demonstration of the internal opening. Those fistulas with a straight tract do well when simply incised and allowed to heal, and burrowing fistulas are best dissected out by some method that avoids destruction of sphincter muscles.

DISCUSSION

Dr. C. C. Terry, South Bend: Our poor results in this line of work are due to incorrect diagnosis rather than to poor technic. Our examinations must be more thorough if we are to have better results; and following thorough examination the important thing is early operation. Often a simple incision, under a local anesthetic, with a small drain, will give relief. When patients are operated on early, forty-eight hours of drainage is all that is necessary.

Study of the Anus, Rectum and Sigmoid

Dr. H. H. Wheeler, Indianapolis: The anorectal line has a very important clinical significance in that it is the point at which the blood supply is differentiated. Above this line the blood is supplied by the superior hemorrhoidal artery, a branch of the inferior mesenteric, and returned through the portal circulation; below this line the blood supply is taken care of through the systemic circulation and returned through the inferior vena cava. The anorectal line also differentiates the lymphatic current and the nerve supply. The rectosigmoidal junction is the point of retention of effete matter, and also the most frequent site of malignancy. Spastic constipation occurs very often from a lower bowel disturbance that hinders the complete evacuation of the bowel.

DISCUSSION

Dr. W. H. Foreman, Indianapolis: The anorectal line is most important in cases of constipation, because until the fecal matter has passed this line the entire act of defecation is beyond control. Beyond the anorectal line it becomes a conscious matter, a matter that we can to a certain degree help or retard—and here is the cause of so many cases of constipation, because instead of making an effort to expel the fecal contents, the activity is inhibited and the fecal contents remain in the rectum and, therefore, below the sympathetic rectal reflexes—the conscious rectal reflexes. Ninety-five per cent. of all constipation is spastic and is due to an accumulation of material in the sigmoid that Nature is unable to expel.

Syphilis as It Pertains to the Eye

Dr. Albert E. Bulson, Jr., Fort Wayne: A syphilitic basis for the ocular lesion is diagnosed not only by certain features of the lesion itself, but also by the presence of these lesions in other parts of the body, by physical characteristics, and by the results of the Wassermann test. However, one must not be led astray by a negative Wassermann.

In acquired syphilis, and especially in the early stages, arsphenamin and neo-arsphenamin have proved of value; but repeated administration of the remedy is usually required, and the treatment should be supplemented by mercurial treatment. The iodids are reserved for lesions accompanied by an abundance of exudate. Syphilitic eye affections demand heroic treatment. Therefore, mercurials should be crowded just short of physiologic effects, and if potassium iodid is indicated at all it should be given in large doses. There are, however, no eye affections that yield any better results from prompt and energetic treatment than those of syphilitic origin, though, on the other hand, no lesions are more disastrous if not diagnosed early, and promptly and vigorously treated.

Factors of Safety in Hysterectomy

Dr. Donald Guthrie, Sayre, Pa.: The three most important factors of safety in this operation are: First, the preparation of the patient. I do not give any preoperative purge, believing it to be a harmful measure. Large amounts of fluid are lost in the purge, and a night that should have been spent in comfort and rest is a veritable nightmare. In case of nervous, excitable patients, or those suffering with insomnia, I advise a few days' rest in the hospital prior to operation. Second, the position of the patient during anesthesia. I advocate the Trendelenburg position when the patient is put to sleep. This means less handling of the intestine and consequently less trauma. Third, postoperative care. The patient should be made as comfortable as possible. Food is given early because it is the best stimulant for peristalsis. A catheter is used only when all other methods fail. I have had no postoperative hemorrhages. In 551 hysterectomies the mortality rate was 1.2 per cent.

Industrial Clinics and Welfare Work as an Industrial Asset

Dr. M. A. Austin, Anderson: As the necessity for making physical examination of employees has been shown to be desirable, the industrial clinic has been established. The average physician would be much surprised to visit some industrial plants and see the equipment provided for the welfare of employees. At one place in Chicago I found a hospital furnished with twenty beds, a surgery completely equipped for any kind of operation, a staff of seven doctors and twelve nurses, a laboratory equipped for roentgenographic work, and an expert in charge of the chemical and microscopic department, doing everything in the way of bacteriologic and serologic work. A Wassermann test was made in every fracture case and in every case in which there was delayed healing in a wound. In a conference with the heads of departments I asked as to the benefits, not only to the company but also to the employees, and they stated that it was the best investment the company had ever made. In former years many unjust claims were paid, which is largely obviated by this supervision of employees. This company, in common with many others all over the country, requires a physical examination of each employee, not only as a safety first measure, but also that each employee may be given the kind of work for which he is best fitted physically.

Infant Conservation

Dr. Ada E. Schweitzer, Indianapolis: The multiplicity of agencies already at work indicates general interest. There is need, however, for organization and centralization of efforts. Effective infant conservation will depend primarily on the care the infant receives, and includes considerations of heredity, prenatal care, care at birth, and all conditions affecting postnatal and infant care. As means of securing proper care we suggest: (*a*) Special education and training of physicians, nurses, teachers, parents and children, each concerning the phase of the work in which he may best aid. (*b*) The provision of adequate service, medical, nursing and hospital facilities available to all. The administration of this division of public health work by special departments established in state boards of health. A nation-wide adaptation of the statistics and suggestions furnished by our national clearing house, the Children's Bureau, U. S. Department of Labor, in the formulation of plans for this work, that the most practical and efficient organization may be accomplished with the least waste of money, energy and time.

Prenatal Care

DR. C. O. MCCORMICK, Indianapolis: Prenatal care is conserving the health and strength of the prospective mother; it is foresight and forehandedness during pregnancy; it is preventive medicine applied to obstetrics; it is an effort to prevent mistakes and mishaps to both mother and infant before and during childbirth; it is an effort to give mother and infant the greatest possible chance. The chief results of this work are that it lowers the infant death rate under one year; produces healthier babies; reduces the number of stillbirths and miscarriages; increases the number of normal births; reduces the number of toxemia and eclampsia cases; increases cases of maternal nursing; reduces maternal mortality; helps eliminate the midwife, and last, but not least, elevates the standard of obstetrics, making it a line of work attractive to the young physician.

DISCUSSION

DR. JANE KETCHAM, Indianapolis: We began last May to examine the children, and in this work we had the cooperation of the medical school, of the physicians, and also of the hospitals and the Public Health Nursing Association. We had in all 212 clinics in which 17,000 children were enrolled. Some were not examined, but many were. In the country districts the greatest cooperation was seen, the people being much interested. In the city we sometimes had no children at all, and at other times the clinics were overflowing. We are already seeing the benefit of the follow-up work. Children are being brought to the medical school clinics and to private offices to see if the defects that we pointed out can be remedied. I feel that this work has been of great advantage to the community, and it certainly is a stimulating field in which to work.

DR. LOUIS ROSS, Richmond: In Wayne County about half the children were registered, and we examined about half of those, so that we examined one fourth of the children under 6 years of age. We are undertaking follow-up work through our social service bureau and a group of volunteer visitors, and the results are very encouraging.

DR. W. A. FANKBONER, Marion: The success of this movement does not depend entirely on the physician. It depends on organization and publicity. If you give the American community a vision of the importance of this work, the people will come to the standard.

DR. N. BAINBRIDGE POWELL, Marion: This campaign for child welfare was very well carried out in our county, but the important thing now is the follow-up work. Our mothers are interested and are willing to do what they are told; but the agencies back of them—the grandmothers and all the talk that is brought to the home—is what we have to fight.

Clinical Significance of Blood in the Urine

DR. H. O. MERTZ, Laporte: Any urinary hemorrhage is an expression of a pathologic lesion along the urinary tract. No definite conclusion can be formed by simply studying the symptoms of hemorrhage, as a malignant process may cause so little bleeding that no anxiety is aroused in the mind of the patient. The most confusing and difficult case of urinary hemorrhage I have seen was due to a small papilloma of the urethra that I had repeatedly overlooked in my examinations. This growth was near the external urethral meatus, and at times a drop of bright red blood would pass from the resting urethra. At urination the first urine contained much blood, while the last showed only microscopic blood.

DISCUSSION

DR. M. JOSEPH BARRY, Indianapolis: The diagnosis of blood in the urine is easy, a microscopic examination of a fresh specimen of urine being all that is necessary; but once the condition has been diagnosed, it becomes of the utmost importance to determine the origin and cause, and this may be done in a majority of cases if we take advantage of the modern methods of diagnosis. After exhausting all of these methods with negative results, there is, however, a certain residue of cases that formerly were designated as "essential renal hematuria," "angioneurotic renal hematuria," "renal epistaxis" and "renal hemophilia." We are not justified in saying there is no lesion back of the hemorrhage because we cannot find it. The most careful observers who have studied the postoperative and postmortem material in these cases have been able to demonstrate evidence of minute foci of infection in the kidney substance; so we must not close our eyes to the possible gravity of the situation in any case in which blood appears in the urine.

DR. BERNHARD ERDMAN, Indianapolis: In the larger cities the commonest cause of gross as well as microscopic evidence of blood in the urine is gonorrheal infection.

DR. L. F. SCHMAUSS, Alexandria: We should not wait for blood in the urine to diagnose renal disease.

Infection and Toxemia in Relation to Glandular Organs

DR. HUGO PANTZER, Indianapolis: Removal of the focus or foci of infection wherever located in the entire body, removal of anatomic irregularities, and active eliminative treatment, medicinal, hydrotherapeutic and hygienic, will restore most cases to normal. The resort to organ therapy fails in many cases unless accompanied by active eliminating measures. Associated, the two do well in those cases in which, under like conditions of disease of the organs of digestion, we administer pepsin, trypsin, pancreatin, etc. In the many cases in which my efforts were limited to the surgical and eliminating measures mentioned, my experience was such that the organ products, as now understood and applied, are of little avail. However, relief from them comes most happily in those cases in which the effects of toxemia and bacteremia have routed all physiologic function for the time or permanently.

Cesarean Section and Obstetric Operations Under Nitrous Oxid-Oxygen Anesthesia

DR. I. MCKESSON, Toledo, Ohio: If there is an ideal anesthetic for obstetric operations, it is nitrous oxid. Its transient effect when removed permits almost immediate resumption of normal labor; its lack of depression on uterine and other muscles when properly administered, its safety to mother and child, and the means at hand for perfusing the child with oxygen through the mother while the cord pulsates, are factors that should decrease fetal and maternal mortality and morbidity in operative obstetrics. The hope of reduction of morbidity and mortality in general rests in great measure on the disposition of the midwife, who delivers 50 per cent. of the parturients in the larger cities.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Sixty-Eighth Annual Session, held at Philadelphia, Sept. 23-26, 1918

(*Concluded from page 1771*)

Intraspinal Auto-Aminized Serum Treatment of Cerebrospinal Syphilis

DR. B. A. THOMAS, Philadelphia: Arsphenamin therapy, either intravenously or intraspinally, cannot restore degenerated spinal cords. Intraspinal treatment accelerates the restoration of the spinal fluid to normal, arrests the degenerative process and insures greater permanency of therapeutic results. Intraspinal treatment by auto-arsphenaminized or arsphenaminized auto-arsphenaminized serum injections should supplement intensive intravenous therapy when necessary. Cases of endarteritis with vascular or circulatory disturbances and those with exudative gummatous meningitis, also many cases of tabes dorsalis, respond satisfactorily to intravenous therapy alone. Cases with marked tract or cortical degeneration offer little, if any, hope of improvement. Treatment in qualified cases should be continued until the findings in the spinal fluid, as well as the blood, are rendered negative, except globulins, which may persist positive in many cases irrespective of the amount of treatment. Mercury and the iodids continue to be indispensable supplementary therapeutic aids in the treatment of cerebrospinal syphilis.

DISCUSSION

DR. LORAINE L. SCHWARTS, Pittsburgh: Unless the general medical profession universally recognizes the necessity for

routine lumbar puncture in all cases of syphilis I believe we shall have in twenty years as many posterior sclerosis tabetics, paretics and cerebrospinal cases as we are having under the old treatment. Opportunities for better work in this field rests primarily with the physician having charge of the patient during the first six months of his infection. I do not in all cases delay exploration of the spinal canal until I am ready to discharge the case. If there is the slightest sign of central nervous involvement, resistance to therapy, or persistence of strong Wassermann within the first three months I have the spinal canal explored and in many of these cases I think we save the patients many intravenous doses of arsphenamin by starting the spinal treatment early. I am particularly in accord with the skeptical views held by many neurologists regarding the effect of treatment because when the patient reaches the neurologist the anatomic changes present render the case unpromising.

Dr. Jay F. Schamberg, Philadelphia: I am in full accord with the deductions drawn by Dr. Thomas on the intraspinal treatment of cerebrospinal syphilis. It is impossible to cure cases of parenchymatous diseases of the nervous system if degenerative changes have already taken place. The colloidal gold test warns us in advance of impending changes in the nervous system. It is essential that we examine the spinal fluid in all patients in whom a negative blood Wassermann is obtained. The time to cure paresis is before clinical evidences of the disease develop.

Dr. Alfred Gordon, Philadelphia: I have had an experience of several hundred cases of neurosyphilis, and in some brilliant results have attended the first or second administration of autoneo-arsphenaminized serum. I have also had some very regrettable results. Generally speaking, I find no parallelism between laboratory findings and clinical symptoms. While the old methods of treatment of neurosyphilis are good, the intraspinal method is an excellent adjunct.

Dr. Paul G. Weston, Warren: In our hospital we divided our paretics into so many groups giving each a different treatment; one group was given no antisyphilitic treatment. We found practically no difference in the average length of life of the treated and the untreated patients. At necropsy the same changes were found in the brains of the treated and untreated.

Application of the Principles of Advanced Psychiatry

Dr. J. Allen Jackson, Philadelphia: The principles are expressed in the functions of mental hygiene, and combine the knowledge gained in custodial institutions with community forces. They are applicable to rural communities, municipalities, or states. In communities with a population over 500,000, community service would best be obtained through a municipal bureau of mental hygiene. To secure cooperation with outside organizations such a bureau should be under the supervision of a trained psychiatrist with subordinate district supervision. In such districts there would be designated definite psychiatric centers under the direction of an alienist assisted by a trained field worker. At these centers public education could be encouraged, early care and treatment with definite assignment to proper institutions, custodial psychopathic, preventoriums, or general hospitals, could be made. The alienist in charge of the psychiatric center would bear the same relation to the custodial institution as the medical inspector of the bureau of health bears to the hospital for contagious diseases. The chief officer of such a bureau should be a conservatively progressive psychiatrist experienced in intramural and extramural psychiatry. The alienist assigned to each center should be a practical man of broad experience and training. The field workers should be graduate nurses with general hospital and psychiatric training and a keen insight of human nature. The immediate effect of such a bureau would be a temporary increase of custodial patients, counterbalanced, however, by the probability of an increased recovery rate. The effect on the indigent and permanently insane would be speculative. Early diagnosis and appropriate treatment would be assured. The interest of patients and their relatives would be safeguarded. The propagation of the mentally unfit would be checked, and the cost to the municipality and state of the care of these unfortunates would be eliminated.

DISCUSSION

Dr. John A. Lichty, Pittsburgh: I am in accord with Dr. Jackson's method of organization. Work of this kind means economy and efficiency, the saving of lives and bringing back to health many people now submerged.

Dr. S. Solis Cohen, Philadelphia: I wish the same plan might be inaugurated in our dealing with tuberculosis. By our defective hygienic organizations we produce a large number of tuberculosis and insanity cases. Having produced them, we save a few in a half-hearted fashion and then allow them to lapse.

Dr. E. E. Mayer, Pittsburgh: Unless physicians get away from the individualistic, they will loose their prerogative of the confidence of the community; social and vocational workers will take up the spheres of activity which should be, in part, those of the medical profession. Hygiene should deal with the social problem of the community as well as the mental. Until we have a plan by which these various agencies work with the medical profession I fear we shall accomplish but little. I trust that our state authorities and organizations may attack the problem from this standpoint.

Prof. Norbert J. Melville, Philadelphia: The Mental Hygiene Committee of the Public Charities Association is prepared to cooperate with physicians in any community who are ready to direct that type of cooperation. We are already working through welfare agencies to convince social workers that they ought to go to the specialist for direction in social psychiatry and that the social agencies ought to send some of their staff for a time to take a course in the principles of social psychiatry. It is the thought of the committee that with the organization of volunteer workers eventually the state may take over the work.

Serum Treatment of Epidemic Cerebrospinal Meningitis

Dr. John A. Kolmer, Philadelphia: The serum treatment of epidemic cerebrospinal meningitis by the intraspinal route of injection has reduced the gross mortality of 70 to 90 per cent. among patients not treated with serum to 30 per cent. or less. The problem is complicated because more than one type of meningococcus is capable of producing the disease, and by the fact that the micro-organism may be carried and disseminated by convalescents and by healthy carriers. It is highly important to employ a potent polyvalent serum in the treatment of meningococcus infections because at the present time type diagnoses and the employment of monovalent serums in treatment are not yet available as in the diagnosis and treatment of lobar pneumonia. Investigations in the Army and Navy have shown that the majority of cases of meningitis are due to previous contact with a patient or a healthy carrier of the coccus. During epidemics of the disease between 1 and 2 per cent. of persons are chronic carriers and these constitute the greatest source of danger. Treatment and management of the chronic carriers are as puzzling as of the healthy carriers of virulent diphtheria bacilli. The successful treatment of meningococcus meningitis with serum depends largely on early diagnosis and the proper administration of sufficient serum of high potency and polyvalency. With the least clinical suspicion of meningitis the physician should resort to spinal puncture without delay. The microorganisms are regarded by Flexner as infecting the meninges by direct extension along the lymphatics of the olfactory nerves with their occasional presence in the blood stream; recent studies, particularly of Herrick and Baeslack indicate that the coccus may be present in the blood more frequently than heretofore thought and that this "meningococcus sepsis" may produce systemic symptoms. It is my custom to culture the blood routinely at the time of spinal puncture. If after two intraspinal injections of large doses of antiserum improvement is not shown clinically and in the analysis of the cerebrospinal fluid, I advise that the serum of a second manufacturer be substituted, hoping that the second serum may contain specific antibodies for the particular type of meningococcus producing the disease which were absent from the first serum. Our main interest in the serum therapy of

meningitis has been concerned with the influence of fresh normal serum alone and in combination with antimeningitis serum on virulent meningococci. On the basis of our experimental results we believe it is logical to complement the antimeningitis serum before intraspinal injection by the addition of at least one cubic centimeter of fresh human or guinea-pig serum to each 9 c.c. of antiserum, particularly in the treatment of serum-resistant cases. We have not yet been able to give this method clinical trial. It seems worthy of use in further efforts toward improving the results of the serum treatment of meningococcus-meningitis.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics

November, 1918, **78**, No. 5

1 Hydatiform Degeneration: Study of Over One Hundred and Fifty New Cases. A. W. Meyer.—p. 641.
2 *Multiple Vascular Anomalies of Great Vessels in New-Born Child. E. H. Norris and L. M. Miller.—p. 668.
3 Relationship of Syphilis to Abortion, Miscarriage and Fetal Abnormalities. F. L. Adair.—p. 678.

2. **Muliple Vascular Anomalies of Great Vessels.**—In the case cited by Norris and Miller there was aplasia of the pulmonary arteries, dysplasia of the left sciatic and femoral arteries, with aplasia of the left common iliac, external iliac, and umbilical arteries, persistence of the left cardinal system with aplasia of the right superior vena cava.

American Journal of Orthopedic Surgery

November, 1918, **16**, No. 11

4 *Transportation of Wounded; Application of Splints. N. Allison.—p. 389.
5 *Hemorrhagic Osteomyelitis and Sarcoma in Bone. G. Barrie.—p. 392.
6 Moving Picture as a Method of Teaching; Especially Adaptable to Postgraduates. R. T. Taylor.—p. 414.
7 *Symptoms Attributed to Lesions of Sacro-Iliac Joint. R. B. Cofield.—p. 418.
8 Pathologic Conditions of Peripheral Nerves. S. M. Cone.—p. 428.
9 The Draft Examination. A. O'Reilly.—p. 433.
10 Demonstrable Luxation of Sacro-Iliac Joints. E. T. Wentworth.—p. 443.
11 General Principles of Splinting for Paralyses from Nerve Injuries: Special Application of These Principles in Median and Ulnar Nerve Paralyses. M. Longworthy.—p. 445.

4. **Transportation of Wounded.**—Allison calls attention to the fact that an equipment of splints and surgical dressings and appliances has been described in a small volume called a "Manual of Splints and Appliances for the Medical Department, U, S. Army," issued to the Army under Special Order 73, Paragraph 17, and approved by the Commanding General of the Expeditionary Force. This volume has been distributed to the medical officers of the division in the field and to those in all hospitals in the Zone of Advance. The splints therein described have been demonstrated to all battalion and regimental surgeons, and to the commanders of all the ambulance companies and the enlisted personnel of the same. Practical drills have been held, and competition started to develop efficient, rapid and proper application of these splints, so that in the divisions already actively engaged a practical knowledge exists of the value of traction and fixation in the support of fractured bones and injured joints. The type of splints selected by the Splint Board has, so far as experience goes, met existing conditions in a most satisfactory manner; the splints are easily applied and give, in a simple and readily understood manner, the exact principles of treatment insisted on by the Division of Orthopedic Surgery.

5. **Hemorrhagic Osteomyelitis and Sarcoma in Bone.**—In this paper the attempt is made to differentiate the lesion termed "hemorrhagic osteomyelitis" from the true sarcoma found in bone, and to demonstrate that to group this affection with the malignant bone neoplasms is not justified. Barrie is of the belief that a diagnosis of malignancy cannot and should not be made or based on the giant-cell content in such processes. A correct and confirmatory diagnosis rests on the variety and architectural arrangement of the other cells occupying the microscopic field. It is absolutely essential to recognize that giant cells, of the type commonly found in some of the low-grade malignant sarcomas, are also present in most of the noninfective low-grade inflammatory processes in bone, wherever destruction has occurred and regenerative and reconstructive effort is taking place; the latter being evidenced by the presence of vascular granulation tissue filling up destroyed areas or cavities. In true sarcoma, regardless of the degree of malignancy, there is never a resting stage; the increase in size of the neoplasm is progressive and constant. No apparent effort at regeneration or reconstruction of normal tissue occurs. In hemorrhagic osteomyelitis, increased bone destruction, following initial injury, is due to nutritional inhibition and necrosis of bony structure resulting from pressure of the proliferative granulation tissues. Hand in hand with destruction, efforts at regeneration and rebuilding of normal structure go on, evidence of which is seen in the formation of primary elemental granulation tissue. Eight cases are cited.

7. **Symptoms Attributed to Lesions of Sacro-Iliac Joint.**—A thorough anatomic and clinical study of lesions of the sacro-iliac joint and of analogous conditions seen so frequently following injuries to joints elsewhere in the body leads Cofield to the belief that the lesions are none other than acute and chronic sprains of the sacro-iliac joint. The pain is doubtless due to the stretching or tearing of some of the fibers of the posterior ligament at the time of the injury, and it may continue for an indefinite time if efficient immobilization of the joint is neglected. The pain in the lumbo-sacral region and buttocks is to be explained by the excessively prolonged effort of the posterior musculature in guarding against joint movement, just as any other continued muscular action, unduly prolonged, will result in a severe aching pain. The sciatic pain is explained by the mechanical irritation of the nerve as it passes through the groove formed by the outer and inner hamstring muscles. These muscles being in a state of spasmodic contraction produce an irritation of the nerve, which causes pain which is referred to the distribution of its branches below the lesion. Further evidence which confirms this theory is furnished by the fact that these patients will almost invariably state that the sciatica appeared immediately following the manipulation. Cofield says that careful study of the anatomy and functions of the sacro-iliac joints precludes the possibility of subluxation or relaxation occurring, except in severe crushing injuries or possibly during the later stages of pregnancy, when all pelvic ligaments are in a state of temporary relaxation. The remarkable results achieved by bonesetters and osteopaths in the so-called "luxations" and "misplacements" of the lower spine or sacro-iliac joint may be attributed to their manipulation of the joint and massage of the muscles, which may modify or relieve the symptoms after one or many treatments, depending on how soon they give the patient the "proper twist."

American Journal of Public Health

September, 1918, **8**, No. 9

12 Program of War Department Against Venereal Disease. W. F. Snow and W. A. Sawyer.—p. 639.
13 Protection Against Food Contamination. C. E. McCombs, New York City.—p. 644.
14 Ice Cream Epidemics and Model Regulations for Control. H. W. Hamilton.—p. 651.
15 Feeblemindedness and Social Environment. P. H. Bryce.—p. 656.
16 Bacterial Examination of Green Vegetables. F. W. Kurk.—p. 660.
17 Public Health Instructor: New Type of Health Worker. E. V. Brumbaugh, Milwaukee.—p. 662.
18 Public Health Lessons of the War. E. C. Levy, New York City.—p. 664.
19 Bibliography of Field Water Supply. J. J. Hinman, Jr., Iowa City.—p. 668.
20 Charts and Maps as Used by Health Officers. G. T. Swarts, Jr., Providence, R. I.—p. 674.
21 Transport Sanitation. C. W. Berry.—p. 690.
22 Child's Ten Commandments to Parents. C. E. Turner.—p. 695.

Archives of Pediatrics

September, 1918, **35**, No. 9

23 *Diphtheria Mortality and Treatment. A. L. Hoyne, Chicago.—p. 513.
24 *Hemoptysis Following Exploratory Puncture of Chest. A. Caille.—p. 524.
25 *Hemoptysis in Children. Five Cases. P. H. Pierson.—p. 527.
26 Congenital Stricture of Duodenum. Operation. Death. H. M. McClanahan.—p. 533.
27 Thomas Sydenham's Description of Measles, Scarlet Fever and Chorea. C. Herman.—p. 536.
28 Story of Evian les Bains. R. B. Mixsell.—p. 541.

23. **Treatment of Diphtheria.**—Hoyne is convinced that far too much whisky is used in the treatment of diphtheria. Strychnin, he says, should only be given for a brief period to tide over some emergency. The indiscriminate giving of strychnin from the time a diagnosis of diphtheria is made until the disease has run its course is extremely likely to produce dire results. The chief requisite of the heart in diphtheria is rest. If stimulants must be given over a prolonged period, some form of digitalis, in Hoyne's experience, has usually produced the best results. The chief value of strychnin is as an emergency measure in case of collapse.

As to the dosage of antitoxin, while each case must be judged on its individual characteristics in arriving at the proper dosage, in Hoyne's experience the following scale has served as a fair guide: 1. Purely tonsillar cases, from 5,000 units to 10,000 units. 2. Laryngeal, 10,000 units to 15,000 units. 3. Pharyngeal (including tonsils), 15,000 units to 25,000 units. 4. Nasal or nasopharyngeal, 20,000 units to 50,000 units. The doses will vary somewhat according to the duration of the disease, and the possibility of more than a single type occurring in the same patient must not be overlooked. If possible, the maximum amount of antitoxin required for a given case should be administered as soon as determined. Nothing is to be gained by a division of the dose, that is, by repeated small doses. Hoyne favors the intramuscular injection into the outer side of the thigh.

24. **Hemoptysis Following Exploratory Puncture of Chest.**—Caillé urges that the clinician bear in mind that in acute cases in which a puncture seems indicated, the introduction of an exploratory needle into a thorax containing a highly congested lung is attended with some degree of risk when cyanosis, and other characteristic signs, point to cardiac or circulatory failure. In obscure, subacute and chronic conditions a roentgen-ray investigation should be made; it may obviate the necessity of a puncture. When exploratory puncture of the chest is performed for the purpose of eliciting the nature of an exudate or transudate, which otherwise reveals its presence by characteristic physical signs, including a bulging of an intercostal space during inspiration, the danger of an internal hemorrhage is practically nil.

25. **Hemoptysis in Children.**—In the five cases cited by Pierson, the hemoptysis was due to bronchial gland tuberculosis, pressure on, and erosion of, a vessel near the hilus by an enlarged gland.

California State Journal of Medicine

November, 1918, **16**, No. 11

29 Syphilis of Thyroid. Report of Case. E. H. Schneider.—p. 484.
30 Seminal Vesiculotomy in Treatment of Gonorrheal Rheumatism. Report of Cases. J. R. Dillon.—p. 485.
31 Disease of Aorta as Shown by Fluoroscopic Study. S. E. Bailey.—p. 490.
32 Treatment of Syphilis of Central Nervous System. R. W. Harvey.—p. 491.
33 Conservation of Children. J. Crawford.—p. 493.
34 Diverticula of Female Urethra. Report of Case of Congenital Type. J. C. Neel.—p. 494.
35 Radium in Treatment of Uterine Cancer: Case Reports. R. Duncan.—p. 497.
36 Roentgen Ray Treatment of Uterine Fibroids. H. J. Kreutzmann.—p. 501.
37 Lung Reflexes in Pulmonary Tuberculosis. F. M. Pottenger.—p. 502.

Boston Medical and Surgical Journal

Nov. 7, 1918, **79**, No. 19

38 Neuroses Among Returned Soldiers. C. B. Farrar.—p. 583. (To be continued.)

Iowa State Medical Society Journal, Des Moines

October, 1918, **8**, No. 10

39 Medical Lessons of Present War. C. P. Howard, Iowa City.—p. 351.
40 Perineal Prostatectomy. J. Crawford, Cedar Rapids.—p. 355.
41 Foreign Proteids in Therapeutics. E. S. Evans, Grinnell.—p. 360.
42 Injury to Face with Involvement of Maxillary Antrum. J. B. Naftzger, Sioux City.—p. 365.
43 Plague in India. B. S. Jain.—p. 368.

Journal of Bacteriology

July, 1918, **3**, No. 4

44 *Relationship Between B. pertussis and B. bronchisepticus. N. S. Ferry and H. C. Klix.—p. 309.
45 Occurrence of Different Types of Colon-Aerogenes Group in Water. L. A. Rogers.—p. 313.
46 *Elimination of Spurious Presumptive Tests for B. Coli in Water by Use of Gentian Violet. I. C. Hall and L. J. Ellefson.—p. 329.
47 *Use of Gentian Violet in Presumptive Tests for B. coli in Milk with Reference to Sporulating Anaerobes. I. C. Hall and L. J. Ellefson.—p. 355.
48 *Value of Petroleum-Ether Method for Isolation of B. Typhosus from Feces. L. A. Kohn and C. Krumwiede, Jr.—p. 361.
49 *Bacterial Nutrition: Utilization of Protein and Non-Protein Nitrogen. N. Berman and L. F. Rettger.—p. 367.
50 *Influence of Carbohydrate on Nitrogen Metabolism of Bacteria. N. Berman and L. F. Rettger.—p. 389.
51 Classification and Nomenclature of Bacteria. Subgroups and Genera of Actinomycetales. R. E. Buchanan.—p. 403.
52 Classification of Aciduric Bacteria. A. H. Rahe.—p. 407.
53 *Germicidal Action of Freezing Temperatures on Bacteria. C. M. Hilliard and M. A. Davis.—p. 423.

44. **Differentiation Between B. Pertussis and B. Bronchisepticus.**—The value of the complement fixation tests in differentiating between these two organisms was made the subject of a study by Ferry and Klix. In a large majority of the tests, the *B. bronchisepticus* immune serum bound the complement in the presence of both the bronchisepticus and pertussis antigens, while the *B. pertussis* immune serum bound the complement in the presence of the homologous antigen and also the human and monkey strains of *B. bronchisepticus*. It did not bind the complement in the presence of a dog strain of *B. bronchisepticus*.

46. **Elimination of Spurious Presumptive Tests for B. Coli in Water by Use of Gentian Violet.**—Hall and Ellefson describe a method to prevent gas formation by anaerobic organisms, so that a greater proportion of positive tests is referable to coliform bacilli alone. This they propose to accomplish through selective inhibition by gentian violet. The gram-positive sporulating aerobes, among which occasional forms capable of giving positive presumptive tests occur, are also inhibited.

47. **Use of Gentian Violet in Presumptive Tests for B. Coli in Milk.**—While Hall and Ellefson do not feel justified as yet in claiming that the addition of gentian violet to lactose broth leads to the detection of *B. coli* in every case in which gas is formed, yet its use certainly does not interfere with the demonstration of *B. coli;* indeed, it distinctly favors such demonstration. Further, the use of 1 to 100,000 gentian violet in the litmus lactose agar plate does not interfere with the growth or acid producing properties of the organism; rather it eliminates to a large degree the masking of acid produced by *B. coli*, through the inhibition of alkali forming, proteolytic, nonlactolytic, gram-positive sporulating bacilli of the hay bacillus group and prevents spreading growths due to these organisms. Moreover, the inhibition of acidifying cocci is of distinct advantage in the search for *B. coli*.

48. **Petroleum-Ether Method for Isolation of B. Typhosus from Feces.**—Kohn and Krumwiede found that the petroleum ether method for the detection of *B. typhosus* has no advantage over direct plating on a medium which restrains the growth of the associated fecal types. With short periods of exposure it may be successful where direct plating on Endo's medium alone fails. There is a strong tendency to reduction of the number of *B. typhosus*, not necessarily associated with a greater reduction of the accompanying fecal bacteria. The danger of infection to those using the method, however, is sufficiently serious to warrant its condemnation, especially as it offers no advantage over direct plating on differential restraining mediums.

49. **Bacterial Nutrition: Utilization of Protein and Non-protein Nitrogen.**—The author's conclusions, summarized briefly, are: Bacteria are unable to decompose coagulated native protein when there is no other source of available nitrogen in the test medium. Purified proteose also is resistant to direct attack by bacteria. Gelatin-nonliquefying bacteria and some of the liquefiers are feeble in their action on Witte's peptone. The ability of an organism to liquefy gelatin is no sure indication of its proteolytic properties. Gelatin and casein resemble proteose in their resistance to bacterial attack.

50. **Influence of Carbohydrate on Nitrogen Metabolism of Bacteria.**—This investigation has shown conclusively that fermentable sugars, in moderate amounts, do not affect the nitrogen metabolism of bacteria, provided experimental conditions are favorably maintained, or, in other words, under conditions of favorable environment. The common belief in a so-called "sparing action" of sugars in a protein medium is untenable in the light of these experiments. There is a true sparing action, however, in the sense that the nitrogen is utilized merely for growth, and that the sugar furnishes the energy.

53. **Germicidal Action of Freezing Temperatures on Bacteria.**—Extensive experiments were made by Hilliard and Davis to determine the effect of cold on bacteria. He found that intermittent freezing of bacteria exerts a more effective germicidal action than continuous freezing. The reduction is much less in milk and cream than in pure tap water when freezing temperatures are applied, due, no doubt, to physical protection offered to the bacteria by the colloidal and solid matter in suspension. The degree of cold below freezing is not a very important factor in the destruction of bacteria. There is no critical temperature below freezing where the germicidal effect is greatly accelerated. The death rate of *B. coli* is much higher in mediums which are frozen solid than it is in the same mediums not solid and at a slightly lower temperature. It is suggested that crystallization, probably resulting in mechanical crushing, is an important germicidal factor in causing the death of bacteria at zero centigrade and below. The greatest reduction occurs promptly on freezing and refreezing, but is not caused so much by the sudden change in temperature as by this mechanical factor.

Journal of Cutaneous Diseases, Chicago

November, 1918, **36**, No. 11

54 Dermatitis Herpetiformis: Relationship to Bullous Diseases, Especially Erythema Multiforme and Pemphigus. M. B. Hartzell, Philadelphia.—p. 497.
55 Rôle of Vegetative Nervous System in Diseases of Skin. E. H. Reede, Washington, D. C.—p. 505.
56 Superinfection in Syphilis. Report of Cases. J. V. Klauder, Philadelphia.—p. 515.
57 Pathology of Mycosis Fungoides. H. Mackay, and W. Boyd, Winnipeg, Canada.—p. 521.
58 Etiology of Cancer of Lip. D. W. Montgomery, San Francisco.—p. 529.

Medical Record

Nov. 9, 1918, **94**, No. 19

59 *New Operation for Hallux Valgus. J. Torrance Rugh.—p. 793.
60 Effect of Selective Draft Law in Production of Psychoses. H. P. Hyder.—p. 806.
61 Treatment of Mental Defectives Through Physical and Medical Measures. E. B. McCready.—p. 809.
62 Personal Hygiene. How Old, Yet Ever New. D. E. Drake.—p. 811.

59. **New Operation for Hallux Valgus.**—In the operation done by Rugh the joint is exposed by a curved, longitudinal incision and the flap (base down) is dissected free to the lower edge of the joint. A tongue-shaped flap is then made (base backward as in the Mayo operation) and should include the bursa and the internal portion of the capsular ligament back of the base of the proximal phalanx of the great toe. This is turned backward and the lower end of the metatarsal is freed of ligamentous attachments. With a sharp osteotome or chisel, sufficient of the epiphysis of the metatarsal is then removed to allow straightening of the great toe. This usually amounts to about one-fourth inch. This cut also is made slightly diagonal from within outward and from behind forward. The inner sharp and hypertrophied corner is next removed with the osteotome. The top and under parts of the epiphysis are then taken off to make a wedge-shaped end on the bone. The slant on the top can be made very much greater than underneath so as to leave as much weight-bearing surface as possible. There will also remain the supporting surfaces of the sesamoid bones on the under surface of the joint. The tongue-shaped flap is then passed across the end of the bone, covering in the wedge and secured with sutures if necessary. Sutures are then passed from the base of the tongue-shaped flap on the inner side to the base of the proximal phalanx, sewing back and forth to hold the toe toward the inner side. The skin incision is next closed and dressings applied to hold the toe inward. The bandage should make a figure-of-eight about the toe and foot and hold the toe horizontal and slightly adducted. In some cases a splint of wood or plaster may be advisable, but this is seldom necessary. After two weeks' time the use of the foot is permitted and weight bearing advised.

Minnesota Medicine, St. Paul

November, 1918, **1**, No. 11

63 Effects of Underfeeding and Refeeding on Growth of Systems and Organs of Body. C. M. Jackson and C. A. Stewart, Minneapolis.—p. 403.
64 Problems of Infection. C. H. Mayo, Rochester.—p. 414.
65 Rheumatoid Arthritis. J. L. Porter, Chicago.—p. 417.
66 Myocardial Degeneration. C. N. Hensel, St. Paul.—p. 422.
67 Ambulatory Treatment of Hemorrhoids. W. A. Fansler, Minneapolis.—p. 426.
68 Nurses in War Time. E. R. Wing, St. Paul.—p. 428.
69 "Chronic Simple Glaucoma." An Exceedingly Common Disease. E. J. Brown, Minneapolis.—p. 430.

New Orleans Medical and Surgical Journal

November, 1918, **71**, No. 5

70 Spanish Views on Spanish Influenza. L. Ambrose, New Orleans.—p. 222.
71 Inguinal Approach in Cure of Femoral Hernia. L. H. Landry, New Orleans.—p. 235.
72 Thyroidectomy Under Local Anesthesia. C. W. Allen, New Orleans.—p. 242.
73 Retro-Pharyngeal Abscess. M. P. Boebinger, New Orleans.—p. 249.

New York Medical Journal

Nov. 9, 1918, **108**, No. 19

74 Destruction of Physiologic Function After Operations on Nose and Throat. W. Freudenthal.—p. 797.
75 Diagnostic Value of Eye Ground Appearances in Nephritics. J. A. Kearney.—p. 803.
76 Acute Eczema Due to Faulty Metabolism of Food Elements. L. Fischer.—p. 804.
77 Nervous and Mental Disturbances of Influenza. S. E. Jelliffe.—p. 807.
78 Temperament a Synonym for Nervousness in Singers. J. J. Levbarg.—p. 811.
79 Confluent Suffocative Broncho-Pneumonia in Wake of Present Influenza Epidemic. F. A. Jones.—p. 811.
80 *Interesting Orthopedic Cases in First Surgical Division, Fordham Hospital. S. W. Boorstein.—p. 812.

80. **Orthopedic Cases in First Surgical Division, Fordham Hospital.**—Boorstein cites a case of bilateral pathologic dislocation of the hip joint, the patient being 6 years of age. The condition was the result of a septic arthritis, the sequel of an attack of scarlet fever. He also cites two cases of low lumbar backache due to enlarged transverse process of the last lumbar vertebra. The removal of this process relieved the patient completely of the pain. Another case was one of chondroma following trauma. The patient had received an injury to the dorsal surface of the right foot by pressure of a rocking chair. For three and a half years the patient was suffering from pain in the foot. A swelling the size of a hazel nut, over the external cuneiform, was removed. The pathologic diagnosis was chondroma. Patient made a perfect recovery and has never suffered since. Another patient developed a sarcoma of the trochanteric region of the femur following a fall on the hip. Evidence of metastases in the humerus and lungs were present.

Southern Medical Journal

November, 1918, **11**, No. 2

81 Internal Diseases, Pediatrics, Neurology, Diagnostic Methods, Etc., Acidosis: T. D. Parke.—p. 721.
82 Tuberculosis Examination Methods in U. S. Army. I. S. Kahn.—p. 727.
83 Confluent Suffocative Bronchopneumonia Following Influenza. F. A. Jones.—p. 732.
84 *Dangers of Chenopodium Treatment of Uncinariasis. D. A. Roth.—p. 733.
85 Intestinal Obstruction Due to Ascaris Lumbricoides. M. D. Levy.—p. 734.
86 Mortality from Malaria Among Wage Earners; Malaria Mortality Experience of General Population. L. I. Dublin.—p. 736.
87 Intensive Community Work in Tennessee. E. L. Bishop.—p. 738.
88 Stem Pessary: An Instrument of Value in Certain Selected Gynecologic Conditions. C. E. Dowman.—p. 742.
89 Extreme Gastroptosis Cured by Rovsing's Operation. J. T. Rogers.—p. 745.
90 Autoserotherapy: Experimental Work with Hydroceles: Report of Cases. E. P. Merritt.—p. 747.
91 Double, Recurrent and Bilateral Tubal Pregnancies—Analysis of Cases. A. P. Heineck.—p. 749.
92 Influenzal Pneumonia in Pregnancy. Five Cases. F. A. Lupton.—p. 754.
93 Diseases of Nasal Accessory Sinuses. J. W. Murphy.—p. 756.
94 Treatment of Acute Infection of Accessory Nasal Cavities and Relation of Pathologic Conditions in Oto-Rhinology to General Medicine and Surgery. J. A. Stucky.—p. 757.
95 Tonsillar Infections as a Source of Systemic Disease. J. J. King.—p. 763.

84. **Dangers of Chenopodium Treatment of Uncinariasis.**—The extensive use of the oil of chenopodium in the treatment of uncinariasis makes a study of its untoward effect of real importance. Roth details the joint experience of several men in the medical wards of Santo Tomas Hospital, Panama. One hundred and three patients were given the oil. Twenty-nine showed signs of reaction. Dizziness, nausea and vomiting, headache, deafness and general depression were the symptoms observed. Deafness is by far the most disagreeable after-effect of the chenopodium treatment. It occurs in 20 per cent. of all the cases, varied in intensity from very mild to a complete loss of hearing, and lasts anywhere from one week to several months. In four of the cases, some deafness still persists two years after the date of treatment. No such reaction was observed after the administration of thymol in similar doses. Roth advises that the oil should not be administered unless there be ample facilities for studying the cases before and after administration. This should include a careful determination of the percentage of hemoglobin. Chenopodium should not be administered to a patient suffering from a high grade of anemia, nor should the treatment be repeated within ten days.

Southwestern Medicine, El Paso, Texas

September, 1918, **2**, No. 9

96 Homologous Corneal Transplant. A. Martin, Phoenix, Ariz.—p. 1.
97 Comparison of Ordinary Stomach Analysis and Fractional Method. M. Hilpert, Humboldt, Ariz.—p. 4.
98 Hospital Standardization. J. E. Bacon, Miami, Ariz.—p. 6.
99 Case of Removal of Epiglottis in Acute Tubercular Epiglottitis. M. Rodgers, Tucson, Ariz.—p. 10.
100 Importance of Laboratory as Aid to Correct Diagnosis. W. F. Chenoweth, Nogales, Ariz.—p. 11.
101 Argyrol Versus Bismuth Paste. H. Crouse, El Paso, Texas.—p. 14.

Surgery, Gynecology and Obstetrics, Chicago

November, 1918, **27**, No. 5

102 Ankylosis of Jaw. Report of Cases. M. S. Henderson and G. B. New, Rochester, Minn.—p. 451.
103 *Rôle of Ascariasis in Gall-Bladder Disease. J. Aviles, San Juan, Porto Rico.—p. 459.
104 Diagnosis of Ureteral Calculi. Report of Cases. D. N. Eisendrath, Chicago.—p. 461.
105 Subdiaphragmatic or Phrenic Abscess. Report of Case. E. Friend, Chicago.—p. 468.
106 *New Procedure for the Localization of Ureteral Stone. H. L. Kretschmer, Chicago.—p. 472.
107 *Loose Bodies in Abdominal Cavity. Report of Cases. M. Emmert, Omaha.—p. 474.
108 Development of Epiphysis. P. H. Kreuscher, Chicago.—p. 480.
109 Analysis of Work of Uterologist. R. L. Dickinson, Brooklyn.—p. 486.
110 Thirty Cases of Cesarean Section. K. C. McIlwraith, Toronto, Ontario.—p. 495.
111 *Studies in Paleopathology. R. L. Moodie, Chicago.—p. 498.
112 Mechanical Treatment of Peripheral Nerve Injuries. B. Stookey, Ann Arbor, Mich.—p. 510.
113 Need and Value of Biopathologic Standardization. W. C. MacCarty, Rochester, Minn.—p. 523.
114 *Suture of Blood-Vessel Injuries from Projectiles of War. C. Goodman, France.—p. 528.
115 *Safeguard in Inguinal Route Operations for Femoral Hernia. M. W. Ware, New York.—p. 530.
116 Autoplastic Nerve Transplantation in Repair of Gunshot Injuries. L. Mayer, New York.—p. 530.
117 *New Method for Relief of Lateral Tension in Cleft-Palate Operations. M. N. Federspiel, Milwaukee.—p. 532.
118 *Placental Tissue as Galactagogue. E. L. Cornell, Chicago.—p. 535.
119 Removal of Ureteral Stones by Aid of Operating Cystoscope; Report of Cases. E. P. Merritt, Atlanta, Ga.—p. 538.

103. **Rôle of Ascariasis in Gallbladder Disease.**—Aviles cites the case of a woman who for 26 years had been suffering from attacks of colic-like pain over the right upper quadrant of the abdomen, and occasionally she vomited stomach secretion mixed with bile. On some occasions she expelled round worms with the vomiting, and in one instance, the vomiting of an ascaris relieved the pain. A probable diagnosis of cholecystitis with calculi was made. Cholecystotomy was performed. The walls of the bladder were hypertrophied, but no rugosity of the mucosa was evident. Aviles did not find any calculus, but a big *Ascaris lumbricoides* about 8 inches in length, partially obstructing the cystic duct. The operation was completed by draining the gallbladder. The patient made an uneventful recovery and all the symptoms existing previous to the operation disappeared. Antihelminthic remedies were administered during the convalescent period.

Aviles points out that an individual who is seized with hepatic colic-like pain, accompanied with vomiting of *Ascarides lumbricoides,* has the syndrome necessary for suspecting that the case is one of migration of the parasite or parasites into the biliary ducts or gallbladder; and unless the symptoms subside, surgical intervention is indicated. Antihelminthic remedies must be administered as a prophylactic measure in those cases in which a history of ascariasis accompanies disorders of the gastrohepatoduodenal system. In those cases in which surgical intervention has been practiced, antihelminthic remedies must be given to avoid new serious complications.

106. **Localization of Ureteral Stone.**—The method described by Kretschmer was suggested by E. Ball. In a case in which a diagnosis has been made of possible ureteral stone, the shadowgraph catheter is passed in the usual way. A roentgen exposure is taken with the catheter in place. A second exposure is made on the same plate without changing the position of the patient or without changing the position of the plate, but by changing the position of the tube, so that a double exposure on one plate is obtained. This method is not new in radiography, as it has been employed in the localization of foreign bodies in various parts of the body.

107. **Loose Bodies in Abdominal Cavity.**—The loose body which was removed from the region to the right of the midline and anterior to the true pelvis in Emmert's case was almond-shaped, 3 cm. long, 2 cm. in breadth, and 1.5 cm. in thickness. It weighed 50 grains. It was light brown in color and covered with a grayish secretion. There was no evidence of a vestigial pedicle or adhesion. On one side was a calcified plaque occupying about one third of the surface. The consistency was rather firm. The body cut with a grating sensation and revealed a distinct capsule about 1 mm. thick enclosing a finely granular material of a yellowish brown color. Interspersed in this were several small particles of a hard, colorless material. No definite nucleus was seen. The contents of the capsule gave a very strong positive guaiac test for blood. Under the microscope it was seen to be composed of fat droplets, crystals, and blood corpuscles. The capsule was in such a state of disintegration as to prevent a diagnosis of the tissue.

111. **Studies in Paleopathology.**—A considerable number of intensely interesting as well as instructive references are given by Moodie to show that the remains of fossil man and

extinct animals show evidences of diseases which are comparable to recent lesions. Indications of disease are rare compared with the abundance of remains of ancient races. This may indicate that disease was not so prevalent in the past as at present, although it must be remembered that the evidence is all skeletal. Some of the lesions seen on fossil and subfossil remains are: osteoma, hemangioma, fractures, callus, osteoperiostitis, necrosis, caries, alveolar pyorrhea, hyperostoses, osteomalacia, spondylitis deformans. These and many other interesting lesions show that disease is no new thing but has been manifest in a diversity of forms for many millions of years.

114. **Suture of Blood-Vessel Injuries from Projectiles of War.**—According to the statistics gathered from various operators engaged in service in the front area with the British forces, Goodman says all seem agreed that gangrene follows the ligation of the popliteal artery in a very large percentage of cases. When gangrene does not supervene, however, the patient frequently suffers from the concomitant symptoms of an impaired circulation. In the five cases cited, wounds of the vessels (3 popliteal and 2 femoral) repaired by suture showed an early and satisfactory restoration of patency, and gangrene from an insufficient blood supply was thus warded off. Goodman suggests that the failures in many of the cases reported may have been due to neglect of one or more of the essential points of the operation, which are: 1. A high degree of asepsis. 2. The segment of vessel to be sutured must be freed from all macroscopic blood and properly protected from all contact during the suture. 3. The sutures must not be introduced under too great tension. 4. Thrombosis is favored by bacterial infection, and by the tissue juices with their ferments. The lumen of the vessel to be sutured should, therefore, be washed thoroughly with Ringer's or saline solution, followed by liquid paraffin. Sutures introduced under tension may cut out and induce hemorrhage. When a main artery is completely severed, a circular suture should not be attempted unless the severed ends can be approximated without tension. When this is not possible, a segment of vein can be transplanted, or when such a procedure is not practical a paraffined tube may bridge the gap and maintain the blood supply until an enlarged collateral circulation is established. The tube should then be removed.

115. **Safeguard in Inguinal Route Operations for Femoral Hernia.**—When the bowel is strangulated or incarcerated, Ware divides the constriction from within by means of a fine silk thread. This thread can be passed by means of a Deschamp needle or any needle sufficiently blunted, or by means of the eyelet of a fine silver probe. By gently whipsawing the thread, a very exact and partial division of the fibers of Poupart may be executed, which can never injure the intestine, and sometimes the slightest excursion of the thread will be sufficient to reestablish the circulation of the intestinal contents and render the reduction of the intestine possible. The thread may even be used as a tractor during the reduction. Thereafter it is divided and withdrawn.

117. **Relief of Lateral Tension in Cleft-Palate Operation.**—In order to prevent the cutting of the suture through the soft tissue, Federspiel has devised a new tension plate which will prevent the suture from cutting out and at the same time relieves the tension as well as renders the palatal tissues inflexible. These plates are made from noncorrosive metal, B. I. B., American gage 22, in various sizes and types. In order to fit these plates, it is necessary to make a small incision near the gingival border of the last molar, being careful not to cut the palatine artery. The incision should be of sufficient length to permit the flange of the plate to enter and lie between the palatal bone and soft tissue. Previous to fitting these plates it is necessary to pass silver wire (American gage 24) through the mucoperiosteal flaps and then through the holes in the plates. The ends of the wire are then passed through perforated lead shot and made tense by pulling the wire and crushing the shot, after which the borders of the flaps can be approximated without tension. After this is done, Federspiel denudes the border of the cleft and places and ties the coaptating sutures after the McCurdy method.

118. **Placental Tissue as a Galactagogue.**—The value of placental tissue as a galactagogue is endorsed by Cornell. He says that 87 per cent. of the babies whose mothers had received placental tissue began to gain on the fourth and fifth days, against 69 per cent. whose mothers did not receive the medication. Forty-four per cent. regained their birth weight before leaving the hospital against 24 plus per cent.

United States Naval Medical Bulletin

Hospital Corps Supplement, October, 1918, No. 7

120 Dental Anatomy. G. M. Damon.—p. 7.
121 Class of Instruction for Hospital Corps, Naval Reserve Force, First Naval District. J. F. Durkin.—p. 14.
122 Training School for Hospital Apprentices at the Boston City Hospital. J. A. Foley.—p. 15.
123 Shock. G. F. Cottle.—p. 25.
124 Pandemics. C. L. Fox.—p. 30.
125 Removal of Foreign Bodies from Cornea and Conjunctiva. A. H. Cecha.—p. 31.
126 Revision of Supply Table of Medical Department, 1918. O. G. Ruge.—p. 35.
127 Statistical Reports. J. Holden.—p. 40.
128 Value of Form F Card and Form I in Compiling Statistics. J. T. Cassady.—p. 45.
129 Waste of Surgical Dressings. H. Rydeen.—p. 48.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Oct. 19, 1918, No. 3016

1 *Preventive and Curative Treatment of Gas Gangrene. By Mixed Serums. F. Ivens, London.—p. 425.
2 Treatment of Pneumonia. D. E. Dickson, Edin.—p. 427.
3 Lobar Pneumonia Complicated by Pleurisy Treated with Polyvalent Serum (Paue). A. C. Guthrie, Edin.—p. 428.
4 Ablation of Labyrinth in a Case with Ménière's Symptoms. C. Yorke, London.—p. 429.
5 Case of Acute Yellow Atrophy. A. C. Roxburgh.—p. 430.
6 Curative Effects of Kharsivan and Neo-Kharsivan in Diseases other than Syphilis. G. S. Taylor, Liverpool.—p. 431.
7 Adenoma of Small Intestine in an Infant, with Resulting Volvulus. J. S. Manson, Edin.—p. 432.
8 Work of a Venereal Disease Clinic. O. L. Rhys.—p. 432.

1. **Treatment of Gas Gangrene by Mixed Serums.**—Convinced by previous experience of the curative value of the antiperfringens serum prepared by Weinberg and Sequin at the Pasteur Institute, Ivens tested the preventive use of antigangrenous serum. From March 21 to September 6, 1918, 3,660 recently wounded received their first operative treatment in the hospitals under his care, and the results obtained are set forth in this paper. Ivens has employed in three series of cases: (a) the mixed serums antiperfringens, antivibrion septique, anti-oedematiens, prepared by Weinberg and Seguin. (b) the polyvalent serum of Leclainche and Vallee. (c) a combination of the two.

Antigangrenous serums were given preventively in 433 cases, all of a severe type, including nearly 300 fractures, many cases already presenting one or other of the clinical signs of gas gangrene, such as crepitation, discoloration of muscle, bronzing of skin, edema, and bad odor. A large number were cases of wounds of the lower limbs. Nearly all patients were received within the first twenty-four hours after being wounded. The serum, given subcutaneously in dilution, Ivens believes has averted the anaphylactic phenomena which have been observed in cases in which this method of procedure has not been followed. When the mixed serum was given at or before the first operation (222 cases), no patient died from gas gangrene, although there were nineteen deaths out of the number from the effects of shock, from multiple fractures, hemorrhage, meningitis, or streptococcal septicemia. In fourteen of these cases the serum was administered at the same time that amputation was performed for massive gas gangrene. Of these fourteen patients, twelve recovered. The two fatalities occurred at the end of a fortnight from streptococcal septicemia, all signs of gas gangrene having disappeared for more than a week. In a very large number of cases the administration of mixed

serums has permitted conservative treatment to be adopted instead of the amputation which would otherwise have been inevitable.

The value of this serum as a disintoxicating agent has been proved in several cases. Its administration has made it possible to wait for some hours until the condition of the patient has improved sufficiently to allow of surgical measures being employed. Infected cases, where mixed serum was omitted either by accident or from the meager supply, have not done as well as other cases in which the patients made a good recovery.

Polyvalent serum was used in 154 cases, nineteen were fatal, six of the deaths being due to gas gangrene; three had also a concurrent streptococcal septicemia. In fifteen of the 154 cases amputation was performed for massive gas gangrene, with eleven recoveries and four fatal results. Of these fatal cases, two were also associated with streptococcal septicemia. It was generally noticed during the period in which the polyvalent serum was given preventively that, except in gas gangrene, the cases seemed to run a straightforward course, without severe streptococcal infections, and that secondary operations on this score were infrequent. Among fifteen cases of streptococcal septicemia, only four had received preventive doses of this serum. Seven patients who had all been treated with fairly large doses of polyvalent serum recovered.

In a third series of cases (fifty-seven) 10 c.c. of polyvalent serum were added to the initial dose of 30 c.c. of mixed serum. Although in ten of these cases gangrene was already present in the form of cellulitis or abscess, in only one did massive gas gangrene develop, namely, after ligature of the external iliac artery, fifteen days after the preventive dose of mixed serum had been given. Two cases were fatal in this series. Although many of these patients had badly infected fractures of the lower limb, only three sustained amputations, one for streptococcal infection, two for secondary hemorrhage. Not only has it been possible in these cases to adopt conservative lines in fractures of the diaphysis, but, in addition, wounds involving the articulations—hip, knee, shoulder, ankle and tarsus—have run an unusually favorable course. In secondary operations, where latent microbes in sequestra so often cause a disappointing result (secondary suture, reamputation, etc.), a preventive dose of polyvalent serum and mixed serum has been found useful.

Glasgow Medical Journal

October, 1918, **8**, No. 4

9 Lethargic Encephalitis: Report of Cases. L. Findlay, Glasgow. —p. 193.
10 Treatment and Prognosis of Nephritis. W. Watson, Glasgow. —p. 205.
11 Surgical Importance of Cerebellar Amygdale. W. J. Moore.—p. 216.

Journal of Tropical Medicine and Hygiene, London

Oct. 15, 1918, **21**, No. 20

12 Frequency of Lactose Fermenters in Sierra Leone Waters. W. A. Young.—p. 205.
13 Susceptibility of Antiscorbutic Principle to Alkalinity. A. Harden. —p. 205.

Lancet, London

Oct. 19, 1918, **2**, No. 4964

14 Gunshot Wounds of Joints. Part II. Treatment of Wounds of Individual Joints. J. Campbell, Liverpool.—p. 509.
15 Outbreak of Scurvy in South African Native Labor Corps. H. W. Dyke, Glasgow.—p. 513.
16 *Case of Absence of All Sensation. F. D. Roberts, Lausanne. —p. 515.
17 Prevention of Relapse of Hysterical Manifestations. T. A. Ross, Edin.—p. 516.
18 Abdominal Evacuation of Pregnant Uterus Before Viability. V. Bonney, London.—p. 518.
19 *What the War has Taught Us About Tetanus. L. Bazy.—p. 523.
20 *Tetanus Consecutive to Superficial Wounds and to Trench Foot. Prof. Raymond.—p. 526.

Oct. 26, 1918, **2**, No. 4965

21 Harveian Oration: Doctrine of Consumption in Harvey's Time and To-Day. P. Kidd, London.—p. 543. (To be concluded.)
22 *Standardization of Wassermann Reaction. W. D'Este Emery, London.—p. 547.
23 *New Technic of Heart Massage: Case of Resuscitation. T. C. Bost and A. Neve.—p. 552.
24 Modification of Webster's Test for the Presence of T. N. T. in Urine. F. Tutin.—p. 554.
25 *"Acute Yellow Atrophy" (?) In a Munition Worker with a Pseudo T. N. T. Urine Reaction Due to Rhubarb. E. Glynn, London. —p. 555.

16. **Case of Absence of All Sensation.**—Roberts cites the case of a soldier, aged 37, far removed from the neurotic or hysterical type, whose family and personal history is negative, except for an attack of yellow fever at the age of 17. Since then he has noted absence of all sensation. There is complete absence of both superficial and deep tactile sense over the whole skin surface, and also over mucous membrane, where attainable. There is no consciousness of deep vibration. He does not feel the ground with his feet, and experiences difficulty when walking at night. He says that his inability to bring his heels together at the command "Attention" without controlling the movement with his eyes has frequently led him into trouble with his drill sergeant. There is complete inability to recognize objects placed in the hand when the eyes are shut. Sense of pain is completely absent. He underwent the radical cure of double inguinal hernia without anesthetic of any kind, being totally unconscious of any sensation either of pain or touch. He never suffers from headache, toothache, abdominal or other visceral pain of any description. The cornea shares in the general anesthesia. Thermal sensation is also absent. There is no perception of temperature in food or drink. There is insensibility to atmospheric changes of temperature.

The muscular sense appears to be completely absent. With the eyes closed, if asked to make any movement with his arms—the choice of movement being left to him—he is incapable of doing so, saying he cannot tell if his arms are moving or not, and all he can accomplish is a slight convulsive twitching of the hands and arms. On the other hand, if, when standing upright, with closed eyes, he be told to walk toward the observer he does so without trouble. He is a good swimmer. The sense of position is absent. He exhibits the phenomenon of the fixation of the limbs in the positions in which they are placed. Sense of taste is completely absent. The sense of smell is practically nonexistent. The fumes of the strong solution of ammonia and of pure hydrochloric acid produce a faint sensation of an odor which the patient remembered to have smelt in his youth.

The only response on both sides to plantar irritation is slight abduction of the little toe. The patellar reflexes were present and normal. The orbicularis palpebrarum muscles contracted on touching the cornea, though no sensation was evoked. The pupils reacted to light and accommodation. The bowels usually act regularly once a day. There is no conscious desire to defecate beyond what he describes as an occasional "rolling" in the abdomen. He never makes any effort, nor is there knowledge of the passage of the feces. Only when there is looseness of the bowels is there any incontinence. Micturition ordinarily occurs during action of the bowels once in twenty-four hours at about 8 o'clock in the morning. There is never a desire to micturate.

Finally, he seems to be without most of the common emotions. He is without family affection. He makes neither friends nor enemies. He has no love of country or home, but he is a smart and efficient soldier and takes a pride in it. The diagnosis of syringomyelia combined with hysteria is suggested as one which seems to meet the case.

19. **What War Has Taught Us About Tetanus.**—Bazy says that the war has shown that: 1. Antitetanic preventive serotherapy is efficacious in the immense majority of cases. 2. When it acts incompletely it so modifies the course of tetanus that it has created new forms of the disease, unknown before its use was general. 3. The study of the check to serotherapy ought to lead (*a*) to use the serum in a more rational way; and (*b*) to know how to complete its action by that of an antitetanic vaccination. The pathogenic medication is the injection of antitetanic serum. The intracerebral route, supported by Roux and Borrel, has been almost abandoned. The intrarachidian route seems of little practical use. Of all the methods it seems that one alone may be

sufficient and free from all criticism: that is the subcutaneous method. But, pathogenic medication, powerful though it is, has need of being completed by symptomatic medication, which is directed to the nervous phenomena. The alkaline persulphates possess in the highest degree the power of destroying the tetanic poisons. A solution of procain, 1.5 per cent., with the addition of a drop of epinephrin, 1:1,000, injected at the level of the brachial plexus for the upper limb, at the point of emergence of the sciatic for the lower limb, and in the vicinity of the nerve trunks controlling the groups of the contractured muscles, has given in all cases most encouraging results.

Bazy has employed as vaccine an iodized toxin, the same as is used at the Institut Pasteur to prepare the horses providing serum. The power of the toxin is such that 1/10,000 c.c. sufficed to kill a guinea-pig of 400 grams. On mixing this toxin with an iodized solution (iodin 1 gm., iodid of potassium 2 gm., distilled water 200 gm.), in the proportion of two thirds of toxin to one third of iodized solution, there is obtained a liquid neutral for the organism, but yet capable of vaccinating it. There can easily be injected the first time 4 c.c. of iodized toxin, the second time 8 c.c., and the third time 12 c.c. It is possible to increase further the number and dose of the vaccinal injections, which are remarkably well borne and provoke neither local nor general phenomena.

20. **Tetanus Consecutive to Superficial Wounds and to Trench Foot.**—Raymond cites two cases of tetanus consecutive to a very superficial wound, so superficial that the wounded man did not present himself for treatment, and consequently did not receive preventive injection of antitetanic serum. The treatment was based on: 1. Excision of the wound. This was carried out as in the case of a malignant tumor, by circumscribing very widely the whole region of the wound. The object was to remove the tetanigenic germs with the tissues which contained them, without causing the penetration, by way of the operation wound, of tetanic toxin into the circulation. 2. The excision of the wound having suppressed all new access of tetanic toxin, it only remained to combat the toxin already fixed in the tissues.

Serotherapy in high doses gave excellent results. The doses employed were 100 c.c. of serum each day by the subcutaneous route. The injections were continued until the infection was overcome, that is to say, from ten to fifteen days. Tetanus in trench foot is always grave, and almost all the cases have been fatal. If systematic amputation of the feet is avoided, as Raymond says it should be, it is of importance to comply with the following rules: 1. To make in all cases a prophylactic injection, as early as possible, of 20 c.c. of antitetanic serum. 2. To repeat this injection, in all the cases where there has been loss of substance of the integuments, phlyctenae or eschar, at the end of eight days. 3. Not to fear, in the grave forms with extensive gangrene, infective manifestations, to increase the doses and inject 30 c.c. and more. 4. To make an injection of 10 c.c., at the least, every eight days as long as there exist sphacelated tissues, necrosed or suppurating zones—in short, as long as the wound is not in the way of definite cicatrization. 5. Not to allow an interval of more than eight days between each injection of antitetanic serum, alike to assure the continuity of the antitoxic treatment and to avoid seric or anaphylactic accidents. Thanks to this practice Raymond has had only the two cases of tetanus among several hundred serious cases treated.

22. **Standardization of Wassermann Reaction.**—Emery suggests that the Wassermann reaction should be reported in terms of Wassermann "units," the figures given by each laboratory being the same whatever the technic, and such as will indicate the number of times the serum is stronger than the weakest serum which will just give definite proof that the patient has syphilis. He suggests also that until further experience is obtained the absorption of two clear units of complement, tested in the manner described in detail in his paper, shall be regarded as a standard unit.

23. **New Technic of Heart Massage: Case of Resuscitation.**—A horizontal incision behind the left costal margin is advocated by Bost and Nerve. The abdominal incision is made 4 inches long in the median line, extending from above the umbilicus well up into the xiphosternal notch. The left costal cartilages are well retracted, bringing the anterior diaphragmatic insertion well into view. A 2 inch incision, begining 1 inch to the left of the median line, carried outward behind the costal margin, cuts the fibers of the diaphragm near their insertion. A blunt instrument pushed in opens the pleural cavity, and the opening is rapidly dilated with two or three fingers of the right hand, so that the whole hand can then be passed into the thoracic cavity anterior to the pericardium. The hand is passed upward, the thumb behind the sternum and the fingers embracing the entire organ in the pericardium. The thumb compresses the right auricle and ventricle, and the base of the heart is effectively massaged. No vessels are injured in this incision, as the superior epigastric artery is internal to the incision and passes into the rectus muscle, and the musculophrenic branch enters the diaphragm through the cellular tissue behind the eighth or ninth costal cartilages and passes backwards, deeper than the incision. The liver and stomach, even if prominent, offer no obstruction to this route, nor is the pericardium in risk of being opened. During the massage the parts can be pressed round the wrist of the operator so that air is not sucked in, and there is no tendency to collapse of the lung.

25. **"Acute Yellow Atrophy" (?) in a Munition Worker with a Pseudo T. N. T. Urine Reaction Due to Rhubarb.**—Glynn cites the case of a young woman munition worker, previous health always good, died suddenly of acute toxic jaundice (?) nine months after leaving the T. N. T. filling room. The liver, however, was much larger, more fatty, and more necrotic than in T. N. T. poisoning, and regeneration was absent. Poisoning with phosphorus or arsenic was excluded; latent T. N. T. poisoning with or without bacterial infection was almost excluded; spirochetosis icterohemorrhagica was excluded. Death was therefore probably due to "acute yellow atrophy." The pseudo T. N. T. reaction in the patient's urine was evidently due to rhubarb, rhubarb and soda having been given the patient before Glynn saw her.

Medical Journal of Australia, Sydney

Sept. 21, 1918, **2**, No. 12

26 Occurrence of Sparganum (Larval Cestode) in Subcutaneous Tissues of Man in Australia. J. B. Cleland, Sydney.—p. 239.
27 Clinical and Microscopic Appearances of Carcinomatous Tumors of the Breast. H. C. Rutherford-Darling.—p. 240.

Sept. 28, 1918, **2**, No. 13

28 Significance of Stammering and Stuttering, with Corrective Measures. T. G. Leary, Edin.—p. 259.
29 Some Cases of Stammering from War Shock Treated by Psychotherapy. C. G. Godfrey, England.—p. 262.

Annales de Médecine, Paris

1918, **5**, No. 4. Pub'd September, 1918

30 *Colloidal Nitrogen in Urine. M. Labbé and R. Dauphin.—p. 314.
31 *Lumbar Puncture in Nervous Shock. W. Mestrezat and others. —p. 327.
32 *Oculocardiac Reflex in Pleurisy. A. Mougeot and J. Colombe. —p. 345.
33 *Functional Tests of the Heart. C. Lian.—p. 358.
34 *Amebiasis on French Front. M. Bloch and C. Mattei.—p. 374.
35 *Suprarenal Treatment in Tuberculosis. R. Porak.—p. 404.

30. **Colloidal Nitrogen in the Urine.**—Labbé and Dauphin tabulate the findings from forty-one persons with various diseases and from six normal subjects. The normal average for the colloidal nitrogen was 0.128, and for the proportion of the colloidal to the total nitrogen, 1 per cent. Increase in the colloidal nitrogen is evidently an index of disturbance in nitrogen metabolism; it is pronounced in all forms of liver disease, and thus may serve in diagnosis of hepatic insufficiency. With cirrhosis of the liver, it sometimes reached 5.5 per cent. of the total nitrogen, and 6.6 with cancer of the liver. It was highest in some cases of severe diabetes, reaching 7 per cent. in one case with coma imminent.

31. **Lumbar Puncture with Nervous Shock.**—The lumbar puncture fluid was found abnormal in about 80 per cent. of fifty cases of shell concussion of the nervous system. The typical finding was the presence of from 0.35 to 1 gm. of albumin to the liter without other cell or chemical abnor-

mality, except hypersecretion. This high albumin content appears in two or three days and does not subside for weeks or months or may persist indefinitely. It testifies to the organic injury from the concussion.

32. **Oculocardiac Reflex with Pleurisy.**—Study of 37 cases of serofibrinous pleurisy, three of hemorrhagic pleurisy, five of hemothorax, three of old cured pleurisy and two of pleurisy with mediastinal lesion, confirms that the pleurisy is liable to upset the balance between the vagus and sympathetic systems. The vagus is usually the one overpowered by the other system, and this opens the portal to various serious complications.

33. **Functional Tests of the Heart.**—Lian ascribes great importance to acceleration of the pulse after a brief effort, and the length of the interval before it returns to its former rate. A one-minute run, or gymnastic treading, two a second, on the same spot, may speed up the pulse to 120 or 130, but in the normal it returns to its former figure in one or two minutes. With the heart incompetent, the acceleration of the pulse is more pronounced, and it takes longer for it to subside. If this is observed on several repetitions of the test, the heart must be considered below par.

34. **Amebiasis in France.**—Bloch and Mattei emphasize the necessity for curing carriers of amebas in the encysted form in particular as they are a source of danger to themselves as well as to others. Emetin is the main reliance but it must be given in adequate doses, although not surpassing 1 gm. as the total dose. Arsphenamin preparations may likewise prove effectual. They have examined more than 500 men with amebiasis among the active troops in France, and all but 10 per cent. of the men had never been out of France. Most of the cases were encountered in 1916; the number has been progressively declining since then. Only about 30 per cent. of the cases presented the typical symptoms of dysentery; in the others the disease might have been overlooked or ascribed to other causes if it had not been for the systematic examination of the stools. About 70 per cent. of the cases were mild, but 5 per cent. were extremely serious and tenacious.

35. **Suprarenal Treatment.**—Porak discusses the action of the medulla of the suprarenal in contrast with that of the cortex, especially when applied in treatment of the tuberculous. In two cases described there did not seem to be any reason for connecting the low blood pressure with medullary suprarenal deficiency as necropsy failed to show abnormal conditions in the suprarenal medulla. In studying the effect of suprarenal treatment he urges that not only the immediate action but the curve of the arterial pressure from day to day over the entire period of treatment and for a time afterward should be recorded. In his clinical and experimental experience, continued suprarenal treatment seemed to induce a certain depression of the heart systole and spasm of the peripheral vessels (reduction of the differential pressure). A rise in the minimal pressure in the course of treatment with suprarenal medulla is a very important symptom, indicating that the treatment must be stopped. All the experiences to date confirm that the medulla and the cortex of the suprarenals are in reality two distinct organs. They also warn that the blood pressure-raising property of the suprarenal cortex may be maintained even in Addison's disease, so that the low blood pressure cannot be ascribed to cortex insufficiency as a matter of course.

Bulletin de l'Académie de Médecine, Paris

Sept. 24, 1918, **80,** No. 38

36 *Certain Causes of Optical Illusions. Prompt.—p. 266.
37 *Welfare Work for Mothers and Infants. Chaptal.—p. 267.
38 *Overlooked Septicemias.—De Gauléjac and Nathan.—p. 269.

36. **Physiology of Optical Illusions.**—Prompt discusses the accommodation for perspective, the perception of objects in relief, of the acute angle, etc. His conclusions as to certain features of physiologic vision suggest an explanation for a number of optical illusions, including the "canals" on Mars.

37. **Welfare Work in a Poor District in Paris.**—The efforts described have reduced the infant mortality to 2.5 per cent. The total expense has ranged from less than $300 the first year (1901), to $9,085 last year. There are over 79,000 inhabitants in the quarter, and 80 per cent. of the infants were artificially fed when the work was begun.

38. **Overlooked Septicemias.**—Summarized in Paris Letter, p. 1676.

Bulletins de la Société Médicale des Hôpitaux, Paris

July 19, 1918, **42,** No. 26

39 *Meningococcus Purpura. A. Netter and M. Mozer.—p. 773.
40 *Case of Pulmonary Sporotrichosis. E. Schulmann and A. Masson.—p. 776.
41 Malaria plus Echinococcus Cysts in Liver. R. Porak.—p. 780.
42 *Polyneuritis Consecutive to Arsenobenzol Treatment. Variot and Bouquier.—p. 783.
43 *Dyspeptic Coma with Acidosis. M. Labbé.—p. 786.
44 *Alcohol in Cerebrospinal Fluid. E. Lenoble and F. Daniel.—790; Id.—p. 793.
45 *Serodiagnosis of Syphilis. H. Eschbach and E. Duhot.—p. 794.
46 Liver Form of Spirochetosis. Manine.—p. 799.
47 *Folds and Fissures in Tongue. G. Railliet.—p. 802 and 804.

39. **Meningococcus Purpura.**—In a postscript to this article, Netter states that the culture features of the microbe cultivated from the infant's spinal fluid during life suggested the *Micrococcus crassus* rather than the meningococcus, and no appreciable signs of meningitis were detected at necropsy. The septicemia evidently preceded the invasion of the cerebrospinal fluid by the microbes, and such cases are becoming common, so that it is not unusual to encounter an apparently normal lumbar puncture fluid. He comments also on the increasing prevalence of purpura with meningococcus infections. In 181 cases of meningitis, 1908 to 1914, there were 2.7 per cent. with purpura, while the proportion has steadily increased since then to 29.7 per cent. in his latest series of 15 cases, out of the total 173.

40. **Pulmonary Sporotrichosis.**—The workman of 43 presented signs of pulmonary sporotrichosis seven years after apparently complete recovery under potassium iodid of a cutaneous mycosis. The cursory diagnosis had been pulmonary tuberculosis, but the right dulness suggested a pleural effusion. No fluid could be obtained by puncture, and radioscopy disclosed a large tumor in one lung with nodules elsewhere. The *Sporotrichum beurmanni* was cultivated from bloody fluid obtained by puncture in the tumor region. Schulmann and Masson know of only five cases of this disease in the lungs on record, and only in two of them was the sporotrichum cultivated direct from lung fluid. Its cultivation merely from the sputum in the other cases leaves a doubt as to the diagnosis.

42. **Polyneuritis After Arsphenamin Treatment.**—The child of 13 had been given intensive arsenobenzol treatment to ward off sympathetic ophthalmia after enucleation of one eye for glaucoma, with subsequent tumor formation in the orbit. He developed typical toxic polyneuritis and paralysis. Marie also reported the case of a girl of 13 with transverse myelitis after intensive arsenobenol treatment for manifestations of inherited syphilis.

43. **Dyspeptic Coma.**—Labbé's patient succumbed to fatal coma in the course of severe intestinal disease. There was pronounced acidosis, but this retrogressed toward the last. The reactions of acidosis were pronounced in the spinal fluid after they had disappeared from the urine. Inanition could not have been a factor as the man was getting adequate nourishment.

44. **Alcohol in Cerebrospinal Fluid.**—Lenoble and Daniel here present their third communication on this subject. It emphasizes that when alcohol gets into the cerebrospinal fluid it seems to persist there unmodified and indefinitely if aseptic conditions prevail. On the other hand, it promptly undergoes chemical modifications and rapidly disappears when asepsis is not observed, persisting at longest not over ten days. This has a medicolegal bearing in criminal cases. In a fourth communication they describe the precautions necessary for chemical examination of the fluid, and the effect on it of preceding administration of drugs.

45. **Serodiagnosis of Syphilis.**—Eschbach and Duhot advocate the use of fresh human serum, saturation of the hemolytic power, and control of the excess of alexin as indispen-

sable factors for precision in the Wassermann reaction or its modifications, as they explain in detail.

47. **Folds and Fissures in the Tongue.**—Railliet found that 188 of 308 soldiers had folds or fissures in their tongues, as also 10 of 41 children over 8. His findings suggest that ridges and grooves in the tongue may indicate the possibility of syphilis.

Journal de Médecine de Bordeaux

September, 1918, **89**, No. 9

48 *Factitious Dermatoses. W. Dubreuilh.—p. 247.
49 *Urinary Spirochetosis. J. Carles.—p. 255.
50 Metal Prostheses for the Skull. Bercher.—p. 259.
51 Paratyphoid Infections. H. Mallié.—p. 260.
52 *Iodin Fumes in Treatment of Chancre. Petges, Gratiot and Cottu.—p. 263.
53 Iodoform-Petrolatum for Chancrellous Bubo. Id.—p. 264.
54 Organization and Work of the Service de Santé. Darbouet.—p. 266.

48. **Factitious Dermatoses.**—Dubreuilh warns among other things that even an apparently firmly dressed lesion may be artificially aggravated by a wire worked in beneath, or by some caustic injected from a hypodermic needle. He protects against the latter by introducing a sheet of zinc foil in the dressing over the lesion. The soldiers guilty of these practices are given a month or two in the guardhouse, but lately one was condemned to five years of hard labor, and the authorities are now reinvestigating some of the other cases.

49. **Urinary Spirochetosis.**—Carles relates that in some of the six typical cases described the clinical picture was that of acute nephritis; in others, hematuria was the only symptom of the urinary spirochetosis. Microscopic hematuria was the rule in all. The urine should be examined for spirochetes whenever hematuria is encountered. Urine containing red corpuscles is a favorable culture medium for spirochetes. He insisted on isolation whenever spirochetes were found in the urine. In one of the cases described, the man had apparently quite recovered from his attack and returned to duty, but hematuria returned after vaccination against typhoid, and the spirochetes appeared anew in the urine.

52. **Iodin Fumes in Treatment of Soft and Open Chancre.**—Petges and his co-workers have applied *enfumage iodé* in 236 cases of soft chancre; in eighty complicated with hard chancre. The method was described in THE JOURNAL, Aug. 25, 1917, p. 678, and elsewhere. The simple devise they prefer is a flask in which a tablespoonful of iodoform is placed and heated. One of the fine tubes in the cork reaches nearly to the bottom of the flask and is connected with a rubber bulb. The other tube is short. The flask is heated over an alcohol lamp, and the fumes are blown through the second tube on the chancre, until its deepest crevices are stained with the rest and the skin around. The lesion should be cleared of pus and débris beforehand. The *enfumage* is repeated on alternate days until the ulceration is well on the way to healing. He dresses with iodoform likewise.

Paris Médical

August 31, 1918, **8**, No. 35

55 *Present Status of Splenectomy. E. Chabrol and H. Bénard.—p. 165.
56 *Pains of the Dyspeptic. F. Ramond.—p. 171.
57 Tardy Nevus. H. Gougerot.—p. 174.

Sept. 14, 1918, **8**, No. 37

58 *Anterior Pleurisy. Roubier.—p. 213.
59 *Radiotherapy of Cicatrices. A. Zimmern, P. Cottenot and A. Houdé.—p. 216.
60 Antisepsis for War Wounds. H. Lorin.—p. 220.

55. **Present Status of Splenectomy.**—The balance sheet for splenectomy in chronic splenomegalic jaundice shows only 10 per cent. mortality or, omitting the dubious cases, only 7 per cent. But time is demonstrating the frequency of inherited syphilis as a factor in this disease and also in splenic anemia, and the brilliant results of operative treatment should not cause this fact to be overlooked in treatment. In Banti's disease the mortality with splenectomy averages from 14 to 16 per cent.; before 1900 it was 44.4 and 31 per cent., and Chabrol cites American statistics that have brought it as low as 9.6 per cent. The splenectomies have thrown light on the functions of the spleen. In many of the patients the red corpuscles afterward returned not only to their normal number, but they regained normal resisting power. This latter new fact, Chabrol reiterates, confirms his previous assertions in regard to the spleen's being responsible for the excessive fragility of the reds. When the spleen enlarges, with no other symptoms than gastro-intestinal hemorrhages, it is possible that spleno-thrombosis may have been the primary derangement, and the enlargement of the spleen the consequence, and not the cause, of the obliteration of the spleen. Gilbert warns that gastro-intestinal hemorrhage may be the forerunner sign of venous cirrhosis of the liver. To remove the spleen to cure recurring hematemesis, as has been done recently, is certainly, Chabrol remarks, one of the most original interventions of recent years.

56. **Pain with Dyspepsia.**—Ramond reviews the indications afforded by different varieties of radiating and fixed pain in dyspeptics. He discusses their correct interpretation and the information thus derived.

58. **Anterior Pleurisy.**—Roubier describes the differential points in a case of pleurisy with an encysted serofibrinous effusion in the anterior mediastinum.

59. **Radiotherapy of Cicatricial Retraction.**—Zimmern has previously published the excellent results obtained in treatment of neuralgia by radiotherapy applied to the root nerve. With painful scars, the action is different; the rays evidently disintegrate the fibrous tissue. The latter is a pathologic form of normal connective tissue and, especially when newly formed, is susceptible to the action of the rays, like other pathologic and embryologic tissues. Any nerve fibers included in the cicatrix are relieved of compression as the fibrous tissue softens up, and thus scars that pain are promptly relieved. Even deep trunk nerves feel the effect, and sensory, motor, and trophic disturbances may retrogress. Laborde has reported rapid return of nerve functioning under radium treatment of paralysis of peripheral nerves. Others have reported cures under roentgen treatment of painful neuritis with spastic conditions, in causalgia, etc., the electric reactions returning to normal. Operative treatment was out of the question in one case described in which the nerves in the shoulder were embedded in a huge cicatricial mass. Under six roentgen exposures, a total of 30 H units, the cicatrix had become supple and the nerves gradually recuperated their functions, with even a beginning faradic reaction in the ulnar nerve. The action of the rays is more pronounced the more recent the formation of the cicatricial tissue. In conclusion, the importance is emphasized of prophylactic postoperative radiotherapy, to supplement an operation for liberation of a trunk nerve. Or it may prove useful to prepare the field for the operation, softening up the scar tissue so the nerves can be dissected out more readily. This "radiosurgical" technic is proving extremely useful. It seems scarcely probable that the nerve tissue could suffer from the exposures to the doses applied, as the nerve tissue is scarcely at all susceptible to the roentgen rays.

Presse Médicale, Paris

Sept. 26, 1918, **26**, No. 54

61 *Treatment of Purulent Pleural Effusions. T. Tuffier.—p. 497.
62 Albumin in Blood and Stools. M. Labbé and G. Canat.—p. 499.
63 Subjective Sequels After Concussion of the Brain. A. Mairet and H. Piéron.—p. 501.
64 Streptococcus Dermatitis Around Wounds. A. Desaux.—p. 501.

Oct. 17, 1918, **26**, No. 58

65 *Comminuted Fractures. R. Leriche and A. Policard.—p. 533.
66 *Acute Hepato-Nephritis. J. Tapie.—p. 534.
67 *Reduction of Angular Displacement of Fractures. Gentil.—p. 536.
68 *Bacteriology of Influenza. G. Vitoux.—p. 537.
69 *War Wounds of Nerves. H. Delagenière and others.—p. 537.

61. **Purulent Pleural Effusions.**—Tuffier advocates a technic which permits the lung to resume functioning at once. Eight illustrations show the various steps. With a persisting fistula, seven or eight rubber tubes stiffened with silver wire are introduced into the cavity, one pushed up into the space above the lung. Under screen control they can be introduced into the remotest recesses of the cavity. Carrel's method of sterilization is then applied, with daily respiratory

exercises to promote expansion of the lung. The excursions of the lung can be gaged by the amount of fluid that can be injected into the pleural cavity during inspiration and during expiration. When only one microbe is found in four fields, the Carrel tubes are withdrawn and the false membrane forming a shell over the lung and its sheet of pleura is shelled off—Delorme's decortication—and the lung expands at once. He gives the details of the forty-seven cases in which these principles have been followed. There were seven medical cases, and thirty-seven chronic and three recent war wound cases. All were cured.

65. **Extensive Comminuted Fractures.**—Leriche and Policard advocate complete excision, ensuring asepsis in the focus. This is followed by repair of the soft parts by retarded primary suture the third day. Fifteen or twenty days later they proceed to whatever grafting or other operation on the bone is deemed necessary to restore the strength of the shaft. In their nine cases of the kind they did a grafting operation in four cases: forearm and tibia, and osteosynthesis, in five: humerus, tibia or radius—all successful. Comparison of the results in these cases with those under other technics has abundantly proved the benefits of this speedy triple intervention.

66. **Acute Massive Hepatonephritis.**—Intense azotemia, anuria and aberrant myeloid reaction distinguished this case of nephritis with jaundice. The man was in the hospital for three months but finally recovered after a neuritis and multiple superficial abscesses. No spirochetes were found in blood or urine at any time, but the clinical picture resembled that of exceptionally grave icterohemorrhagic spirochetosis.

67. **Screw Reduction of Fractures.**—Gentil passes a wire around the limb and then applies continuous traction on the wire, perpendicular to the limb, by means of a thumbscrew in a small frame. The traction can be spread over a large area by interposing a plaster partial cast or arranging plaster collars above and below the site. Depage has applied the same principle with a cable and weight for fractures of the femur, but Gentil shows how it can be applied to angular and overlapping fractures, etc. It usefully supplements continuous traction and immobilization, restoring normal static conditions.

68. **The Microbe of Influenza.**—Summarized in Paris Letter, p. 1676.

69. **War Wounds of Nerves.**—These addresses by Delagenière, Delorme, Walther and others were delivered at the recent French Surgical Congress at Paris.

Revue Médicale de la Suisse Romande, Geneva

September, 1918, **38**, No. 9

70 *Restriction of Fluids in Cardiac Edema. J. Tchertkoff and F. Heim.—p. 509.
71 *Kaolin in Treatment of Cholera. V. Kuhne.—p. 555.
72 *Dyschondroplasia. E. Kummer.—p. 569.

70. **Reduction of Fluid Intake in Treatment of Cardiac Dropsy.**—This extensive report tells of fifty cases of cardiac dropsy systematically treated with reduction of fluid and of salt. This alone may restore conditions to clinically normal or, if not, it materially reenforces the action of heart and kidney tonics, restoring compensation except in the absolutely doomed cases. The Karell treatment is on the same principle, but it represents unnecessary deprivations. Tchertkoff and Heim gave a light nourishing diet of 2,000 calories but with only 700 or 900 gm. of fluid and no salt in the bread. The patients do not object to this diet for a week; after this it is modified to allow 1,500 or 1,800 gm. fluid and 2.5 gm. salt with 2,500 calories, but no meat. This fluid-poor and salt-poor diet is less distasteful the more pronounced the dropsy; that is, it is tolerated better, the more urgently it is needed. The weight, the daily diuresis, the rhythm and frequency of the pulse, the blood pressure and the refractometer findings in the blood were compared systematically in all the cases. All presented symptoms of edematous asystoly, dyspnea, cyanosis, congestion in lungs and liver, oliguria and dilatation of the heart. In eighteen, no drugs were required, and clinical balance was restored within the week by the dry diet and repose alone. The patients were from 30 to 80 years old. One lost 12 pounds in five days, and several voided 3,000 c.c. of urine in twenty-four hours, with an intake of fluid less than 600 or 800 c.c. All left the hospital with earning power restored. They report further three exceptionally severe cases in which the fatal outcome could not be warded off in this way, but improvement was marked even in these cases. In all the other cases, the dry diet had to be reenforced with drugs to act on heart and kidneys. They review the literature on the subject, and theorize to explain the efficacy of restriction of fluids. Salt has to be restricted likewise, to enable the patients to bear the reduction in fluids, and especially because the kidney functioning is usually below par in these cases. Repose is an important element in the treatment, perhaps the most important of all. The reason why this is not generally appreciated is because drugs are usually given at once, without waiting to watch the effects of repose and dieting alone. They make a point of refraining from drugs, even a purgative, during the first few days. If there is a tendency to uremia, the diet has to be poor in proteins.

71. **Cholera.**—Kuhne declares that with kaolin treatment the mortality of cholera was reduced from 45 or higher to 2 or 3 per cent. in his extensive experience in Serbia. All the other physicians had similarly favorable experiences, and the authorities provided large stores of kaolin for immediate use as occasion arose. This method of treating cholera, etc., by drinking large amounts of suspensions of kaolin was introduced by Stumpf several years ago, and has been repeatedly described in these columns. It is said to be entirely harmless, and given at the first symptoms cures in twenty-four hours. Kuhne reiterates that even apparently moribund cholera patients may be saved by it. If too weak to swallow, 3 liters of the constantly stirred suspension can be injected into the bowel. The kaolin is useful in all forms of diarrhea, so that even if the diagnosis has been incorrect, benefit will result. When skeptics protest against this *médication bolique*, Stumpf merely says: "When you have experienced what bolus alba is capable of, then you can talk, but not before."

72. **Ollier's Disease.**—Kummer gives a detailed illustrated report of a typical case of dyschondroplasia in a young woman.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Sept. 28, 1918, **48**, No. 39

73 *Superheated Air in Surgery. H. Iselin.—p. 1297.
74 Giant Blood Platelets. A. Fonio.—p. 1300.
75 Isolated Traumatic Paralysis of Suprascapular Nerve. J. Dubs.—p. 1305.
76 *The Swallowing Reflex from the Cornea. J. Strebel.—p. 1311.

73. **Superheated Air as Aid to Surgery.**—Iselin lauds the benefit from application of superheated air in treatment of acute inflammations, accidental wounds, and to promote drainage of the peritoneum. Applied at once after early surgical clearing out of the wound it wards off infection. He uses the ordinary hot air frame or cradle but has an electric device to heat the air.

76. **The Swallowing Reflex from the Cornea.**—Strebel has noticed that when the surface of the eye is bedrizzled with some indifferent fluid, such as saline, there is a reflex swallowing movement in addition to the reflex lid closing and the withdrawal movements. This swallowing reflex is apparent even in the newly born if cold water is used. He found it pronounced in 85 per cent. of 500 persons tested. Its absence indicates lack of sensibility in the cornea, and this was the case in eleven cases of herpes of the cornea in 1916 and also in a recent series of seventeen cases of influenzal herpes of the cornea. It was impossible to elicit the swallowing reflex in these cases.

Gazzetta degli Ospedali e delle Cliniche, Milan

July 18, 1918, **39**, No. 57

77 *Determination of Nitrogen in Urine. E. Pittarelli.—p. 555.

July 21, 1918, **39**, No. 58

78 *Traumatic Ankylosis of Jaw. A. Vecchi.—p. 563.

July 25, 1918, **39**, No. 59

79 *Methylene Blue Reaction in the Urine. C. B. Farmachidis.—p. 574.
80 Treatment of War Wounds. G. B. Ricci.—p. 578.

77. **The Nitrogen in the Urine.**—Pittarelli describes an improvised apparatus with which it is possible to apply the Kjeldahl procedure to determine the "azoturic ratio," that is, the exact proportion of nitrogen eliminated in the urine in the form of urea.

78. **Ankylosis of Upper Jaw.**—Vecchi remarks that after a fall on the chin, temporomandibular ankylosis may develop on both sides, but with direct trauma it is unilateral, even when the jaw has been long immobilized. Forcible correction of the ankylosis is of little use as the ankylosis soon becomes established again. Even osteotomy does not give permanent results. He gives the details of a case to show the good and durable effect of resection with interposition of a muscle flap. Any operation of the kind should be done with everything ready for an emergency tracheotomy at need, but it is not necessary to make a preliminary tracheotomy if the tongue is fastened with forceps or a thread, so that the tongue cannot slip back into the throat. After the operation the jaw should be actively and passively exercised; a wooden wedge between the teeth is useful for this. These exercises have to be kept up for months and years as the tendency for exuberant callus production may long persist, especially in the young and vigorous.

79. **Methylene Blue Test for Bile Pigments in the Urine.**—Farmachidis states that methylene blue reveals the presence of bile pigments in the urine, by a change in tint to a grass green, on addition of 5 drops of a 1 per cent. solution of methylene blue to about 5 c.c. of the urine. If there is only urobilin present, the tint is more of an emerald green. With other substances in the urine the tint remains the unmodified blue.

Riforma Medica, Naples

August 17, 1918, **34**, No. 33

81 *Genital Anomalies as Clue to Renal Anomalies. P. Guizzetti.—p. 646.
82 Suture after Cesarean Section. S. Delle Chiaje.—p. 649.
83 Hyphomycetes Develop in Wound Healing Under Carrel Treatment. L. Torraca.—p. 650.
84 Present Status of Puncture of the Brain. R. Falcone.—p. 655.
85 Histologic Findings after Pneumonia. G. Moscati.—p. 656.

Aug. 31, 1918, **34**, No. 35

86 Present Status of Laryngeal Tuberculosis. V. Grazzi.—p. 686.
87 Congenital High Scapula. C. Guarini.—p. 689.
88 Institutional Treatment of Psychoneuroses. A. Salerni.—p. 691.
89 Present Status of Cranioplasty. E. Aievoli.—p. 693.
90 The Significance of the Habitus Phthisicus. A. Ferrannini.—p. 694.

81. **Coexistence of Renal and Genital Anomalies.**—Guizzetti found congenital anomalies in the kidneys in 6 of 1,187 female cadavers and in 9 of 1,653 males. In 7 of the total 2,840 cadavers, one kidney was missing. In a previous series reported, one kidney was missing in 39 of 20,000 cadavers. In his last series, in one-third of the 15 cases of renal anomalies there were also anomalies in the genital sphere. This suggested the possibility that the discovery of genital anomalies might turn the scale in favor of the assumption of some renal deformity in dubious cases. In 14 cadavers he found that the vas deferens on one side was missing, and in 4 others it was defective. In these 4 the anomaly could not have been detected by clinical examination, but in the others the absence of the vas deferens could have been readily ascertained by palpation of the spermatic funiculus. In this group of 14, the kidney on one side was missing in 7; in one there was a horse-shoe kidney, and in the other 2 the kidney was not in its normal place; only in 4 were the kidneys apparently normal at birth. Among 12 instances of one missing kidney, therefore, the vas deferens on that side was missing likewise. Palpation of the spermatic cord would easily have revealed this during life. Especially with normal ureter openings in the bladder, the discovery of anomalies in the vas deferens might prove the warning signal to prevent nephrectomy when there is only one kidney. Anomalies of the kidneys seem to be more frequent in men than in women. By comparing the palpation findings on the two sides it is a simple matter to detect the absence of the vas.

Revista Ibero-Americana de Ciencias Medicas, Madrid

June, 1918, **39**, No. 166

91 *History of Medicine in Spain. E. G. del Real.—p. 401.
92 *Treatment of Gastric Ulcer. R. Luis y Yagüe.—p. 423.
93 The Epiphysis of the Olecranon. Rioalido.—p. 437.
94 To Distinguish Inorganic Heart Murmurs. A. N. Blasco.—p. 441.
95 Present Status of Endocarditis. A. Mut.—p. 453.

91. **History of Medicine in Spain.**—In this instalment, del Real discusses the work of Arab, Spanish Jewish and Benedictine physicians in the early history of Spain.

92. **Gastric Ulcer with Hypochlorhydria.**—Luis comments on the difficulty of treatment in these cases as the usual measures to combat hypochlorhydria are contraindicated by the ulcer. Milk and bismuth can be relied on, and possibly olive oil, given an hour before eating. Cases with good motor functioning and tendency to constipation are the ones that benefit most from this.

Revista de Medicina y Cirugia, Havana

Sept. 25, 1918, **22**, No. 18

96 *Empyema in Child. R. M. Orihuela.—p. 499.
97 Life Work of Carlos J. Finlay. J. Le-Roy.—p. 501. Conc'n.

96. **Empyema in Child.**—Orihuela reports the case of a boy under 6 with remittent fever suggesting typhoid and also bronchitis and cough, but with scarcely any dyspnea. The left side of the chest bulged, and two liters of greenish pus were withdrawn and the cavity drained with large tubes. The operation was done under local anesthesia, without resection of ribs, and complete recovery speedily followed.

Revista de Medicina y Cirugia Practicas, Madrid

Aug. 14, 1918, **120**, No. 1518

98 Medical Aphorisms. S. V. de Castro.—p. 161.
99 Prenatal Hygiene or Intra-Uterine Puericulture. J. J. de la Mucla.—p. 163.

Vida Nueva, Havana

September, 1918, **10**, No. 9

100 *Formation of Bone in Penis. A. G. Casariego.—p. 247.
101 Experiences with Laparotomies. E. R. Aragon.—p. 249.
102 *Anthrax Vaccine in Treatment of Leprosy. J. M. Campos.—p. 251.
103 Professional Ethics. O. Montoro.—p. 252.

100. **Formation of Bone in Penis.**—The man of 50 refuses to allow operative removal of the long narrow strip of bone tissue visible in roentgenoscopy. In another case there was induration of the corpora cavernosa but no actual bone formation; under roentgen treatment, the induration retrogressed. Neither of these men had had known venereal disease. In the following number A. Lutz relates that formation of bone in the penis is physiologic in certain species of monkeys, and cites considerable bibliography. He has never heard of a case in the human before.

102. **Treatment of Leprosy.**—Campos writes from Colombia to call attention to the "truly remarkable improvement" in two cases of leprosy in which an anti-anthrax vaccine was given systematically. The bacillus of lepra seems to be unable to survive the action of the toxins elaborated by the anthrax bacillus. He injected lepra patients with cultures of the anthrax bacilli. This seemed to modify the tissues in such a way that the lepra bacilli soon perished. The rapid improvement was paralleled by the disappearance of living bacilli from the field until no further active bacilli could be found in specimens of lymph and nasal secretions. Campos urges others to give this simple and inexpensive biologic treatment a trial. The dose each time was 0.5 c.c. of the liquid vaccine against bacterial anthrax, obtained from the Pasteur Institute.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

Aug. 17, 1918, **2**, No. 7

104 *Glycolysis in the Blood. J. Hekman and A. van Meeteren.—p. 497.
105 Influenza. B. M. van Driel.—p. 513; J. J. van de Velde.—p. 517; G. F. Wesenhagen.—p. 521.
106 *Electric Reactions in Children. J. B. Stalling-Schwab.—p. 514.
107 Scarlatinal Ethmoiditis; Three Cases. W. Schilperoort.—p. 522.

104. **Glycolysis in the Blood.**—Hekman and van Meeteren describe a micromethod with which it is possible to estimate the sugar-splitting property of the blood. Over sixteen pages are devoted to the history of the subject, description of their research, and the results realized. Their technic is based on Bang's method, using 0.5 gm. sugar, dissolved, on Bang filter paper, drying at 100 C., adding 0.1 c.c. of blood, and leaving it in contact with the sugar for two hours. The sugar content of the blood is known and the difference between the findings before and after the test shows the amount of sugar that has been split. The paper is placed in a cylindrical glass, open at both ends; this is placed in a test tube, the lower end resting on a marble in the tube. A minute amount of blood answers for the test, and the whole blood is used; the findings corresponded always with those of other tests and methods. In order to ensure greater precision they improvised a device to regulate the gas pressure for the Bang titration procedure, as they describe.

Among the practical results obtained was the demonstration that the glycolysis in the blood is no index of pancreas functioning. The sugar-splitting property of the blood kept abnormally high in a dog after removal of the pancreas. In diabetes, the glycolytic power was abnormally low in the graver cases. By dividing the figure representing the sugar content of the blood, with the figure representing the glycolysis, we obtain a quotient which represents the sugar-splitting coefficient of the blood. This coefficient varies very little in normal persons, never going above 1.5 or below 0.7 in their experience, so that 1 may be accepted as the normal. In diabetes, this coefficient runs up very high, to 6 or above. Comparison of series of coefficients shows that this increased glycolysis is a compensatory function which strives to get rid of the excess of sugar in the tissues (including the blood). But this compensating process is not complete; the glycolysis does not increase parellel to the increase in the sugar content of the blood. Especially in the graver cases, this compensating function is defective, and sometimes there is no sign of it, the glycolysis figure being actually below the normal figure. This of course is an unfavorable sign; if the glycolysis increases under treatment this modifies favorably the prognosis.

The findings in cases of defective or perverted functioning of the thyroid, parathyroids and pituitary body also suggested the possibility that this abnormal functioning might be an important factor in the pathogenesis of diabetes. When glycosuria without ketonuria is encountered, and the glycolytic power of the blood is found abnormally low, the possibility of a thyrogenous or pituitary origin should be borne in mind. They expect to continue research on the influence of thyroid treatment, of epinephrin, etc., on the glycolysis in the blood, but at present they merely report the facts they have established, for some of which they have no explanation as yet to offer.

106. **Electric Tests on Children.**—Stalling-Schwab reports from the Emma Children's Hospital at Amsterdam the findings with electric tests applied to thirty-nine children free from manifestations of spasmophilia, and to forty-eight who presented symptoms of tetany. She compares the findings with what others have reported in this line. They confirm that these two groups of children respond quite differently to electric tests, and also to treatment by dieting and calcium, phosphorus and cod liver oil.

Hospitalstidende, Copenhagen

Aug. 21, 1918, **61,** No. 34

108 *Operative Treatment of Tuberculosis of the Spleen. E. Petersen. —p. 1105. Comenced in No. 33, p. 1073.

108. **Tuberculosis of the Spleen.**—Petersen insists on the necessity for removal of a tuberculous spleen at the earliest possible moment, even if there may be tuberculous lesions elsewhere. The tuberculous spleen leads inevitably to death unless it is removed in time, while a complete cure is possible after splenectomy if no other organs are involved. He devotes eleven pages to tabulation of the details in twenty-one operative cases, including one from his own experience. The mortality was 25 per cent., but 60 per cent. were cured when last heard from. The findings are tabulated also from twenty-three cadavers with tuberculosis of the spleen. The differential diagnosis is based on the chronic course, the personal and family history, and the enlargement of the spleen with little if any tenderness, but there are about a dozen other diseases that have to be excluded first, from leukemia, hemolytic jaundice, polycythemia, and anemia to malaria, cysts and abscesses. The chief difficulty is in excluding pseudoleukemia and polycythemia. Banti's disease calls for splenectomy likewise. Even at the laparotomy, differentiation may be difficult. Hayden in one case merely curetted and drained, but this is permissible only when total splenectomy is impracticable. Quénu and Baudet in one case found a tuberculous abscess in the lower pole, and they were able to marsupialize it, suturing the spleen to the incision in the parietal peritoneum, so that the abscess could be incised and cleared out, all outside the peritoneum. Recovery was complete in four months. In the advanced necropsy cases, the spleen weighed up to 4 pounds, 3,780 gm., or measured 27 by 19 by 16 cm. in some of the cases.

Norsk Magazin for Lægevidenskaben, Christiania

September, 1918, **79,** No. 9

109 *Insanity in Norway. M. Holmboe.—p. 977.
110 *Intracranial Sympathetic Paralysis. G. Ræder.—p. 999.
111 *Sanatorium North of Arctic Circle. T. Neumann.—p. 1017.
112 Public Health in Norway in 1740. J. Anderssen.—p. 1038.

109. **Insanity and Feeblemindedness in Norway.**—This review of the 1910 census supplements Holmboe's two previous works of the kind on the census of 1890 and of 1900. In 1900 the insane numbered 2.63 per thousand inhabitants, and in 1910, 3.13 per thousand. He advocates compulsory registration of all the insane and feebleminded.

110. **Intracranial Sympathetic Paralysis.**—Ræder's patient had a tumor between the internal carotid artery and the gasserian ganglion. Besides headache, vomiting and pains in the region innervated by the left trigeminal, there had been paresis of the left side of the palate, miosis, ptosis and reduced intra-ocular pressure, but there were no vasomotor or trophic disturbances and no enophthalmos.

111. **Far Northern Sanatorium.**—The Vensmoen institution described is within forty miles of the Arctic Ocean, thirty miles north of the Arctic circle. It is a state sanatorium, with accommodations for fifty-four tuberculous of each sex. Of the total 257 given treatment since it opened two years ago, a favorable result was evident in 72.77 per cent., although nearly 35 per cent. of the patients were in the third stage of tuberculosis. In winter the sun is above the horizon only for one hour and thirty-seven minutes; in summer the sun is below the horizon only for six hours.

Ugeskrift for Læger, Copenhagen

Sept. 12, 1918, **80,** No. 37

113 *Congenital and Inherited Zonular Cataract. K. Lehmann.—p. 1443. Commenced in No. 36, p. 1407.

113. **Inherited Cataract in Danish Family.**—Lehman has been investigating the Volkmann family, tracing the tendency to zonular cataract through four generations. The cataract was bilateral in nearly all those affected. Its occurrence did not indicate that it was inherited as a mendelian dominant, but on the other hand there was nothing positive to disprove this. Epilepsy and idiocy were not unusually common in this family, but the poor eyesight reduces the level of the environment. Of the sixty children or young persons in the various branches of the family, twenty-five had cataract, and four of these had had convulsions and two rachitis. The color of the hair, eyes, the height, chest measure, etc., did not display any special inherited features paralleling the cataract. The best results in treatment were with repeated small discisions. In one, vision is 6/6 although two operations were done at 14 and 16 years of age. The danger of infection is minimal with this small intervention. The patients must be supervised to detect the first onset of glaucoma.